THIS WEEK'S National Petroleum NEWS

Index to Coming Meetings

National Safety Council, Petroleum Section, Pittsburgh, Pa., Sept. 29 to Oct. 4.

International Petroleum Exposition and Congress, Tulsa, Oct. 4 to 11.

American Society of Mechanical Engineers, national petroleum meeting, Tulsa, Oct. 6, 7, 8.

Kentucky Petroleum Marketers Association, Seelbach Hotel, Louisville, Ky., Oct. 14.

Big Four State Jobbers Convention, (Missouri, Iowa, Kansas and Nebraska), President Hotel, Kansas City, Mo., Oct. 14, 15, 16.

Virginia Oil Men's Association, Charlottesville, Va., Oct. 16, 17.

National Association of Credit Men, Petroleum Refiners Division, St. Louis, Mo., Oct. 20, 21, 22.

Independent Petroleum Association of Texas, San Antonio, Oct. 27

Independent Oil Men of America, Marketing Congress and Exhibit, Statler Hotel, St. Louis, *Mo., Nov.* 2, 3, 4, 5.

American Petroleum Institute, Stevens Hotel, Chicago, Nov. 10 to 13.

NATIONAL PETROLEUM NEWS

Vol. 22 No. 39

Published by

The National Petroleum Publishing Co.
1213 W. Third St., Cleveland, O.

Tel. CHerry 7672

Branch Offices:

Tulsa, 904 World Bldg., Tel. 3-7132.

New York, 342 Madison Ave., Tel. Vanderbilt 3951.

Houston, 2020 Gulf Bldg., Tel. Fairfax 6286.

Chicago, 35 E. Wacker Drive, Tel. State 4141.

Subscription rate $3.50 per year, U. S., Mexico and Canada; $5 Foreign countries. Current copies 10 cents; for back issues more than two months old 25 cents per copy.

All contents copyrighted, 1930, Trade Mark Registered U. S. Patent Office.

Member Audit Bureau of Circulations and Associated Business Papers.

General

Flexibility in Operation and Product Chief Feature of Hydrogenation..... 51
E. M. Lyons Reelected President of N. P. A. for Fourth Term..... 55
Trite but True: Many Marketers Don't Know Costs, Says "Ike"..... 57
Gasoline Dumping Brings Price Cuts in Detroit and Ohio Points..... 59
Review of Late Production News..... 61
A. P. I. Report of Refinery Operations Week Ended Sept. 20..... 63
Champlin Launches Attack on Oklahoma Proration in Federal Court..... 64
Sinclair to Build New Pipeline to Oklahoma- Kansas Plants..... 65
Van Field Second Only to Yates in Conservative Exploitation..... 67
New California Proration Program Allows but 550,000 Barrels..... 68
New Elwood and Kettleman Hills Wells Threaten California Proration..... 69
Harper County Wildcat Get Wet Gas; Big Well in Texas Panhandle 71
600 Exhibitors Ready to Welcome Men to 1930 Petroleum Show..... 73
"Expo" Visitors May See New Equipment at Work in Oklahoma City Field.... 75
Marketing Equipment Finds Place in Tulsa Oil Exposition..... 85
Hydrogenation Process Pictured at Tulsa Oil Show..... 96
What Exhibitors Will show at Tulsa Oil Show.....107, 110, 113, 115, 116, 119, 120, 123, 124, 204, 215
U. S. Crude Production by Fields Week Ended Sept. 20..... 209

Merchandising

"Certified Lubrication"..... 161
Western Farmers Co.—Operative Owns Oil, Equipment Supply Company 176
Religion Joined with Low Prices to Get Gallonage for Self Serve Stations 181
Satisfying All Needs of Motorists is Trend in Oil Merchandising..... 186
Automatic Dispenser Serves Gallon Cans of Gasoline..... 196
Airplane Tender Dispenses Hot Oil to Reduce Warming Up..... 207
"Gas" on Consignment Eliminates "Dry" Roadside Stations..... 234

Engineering

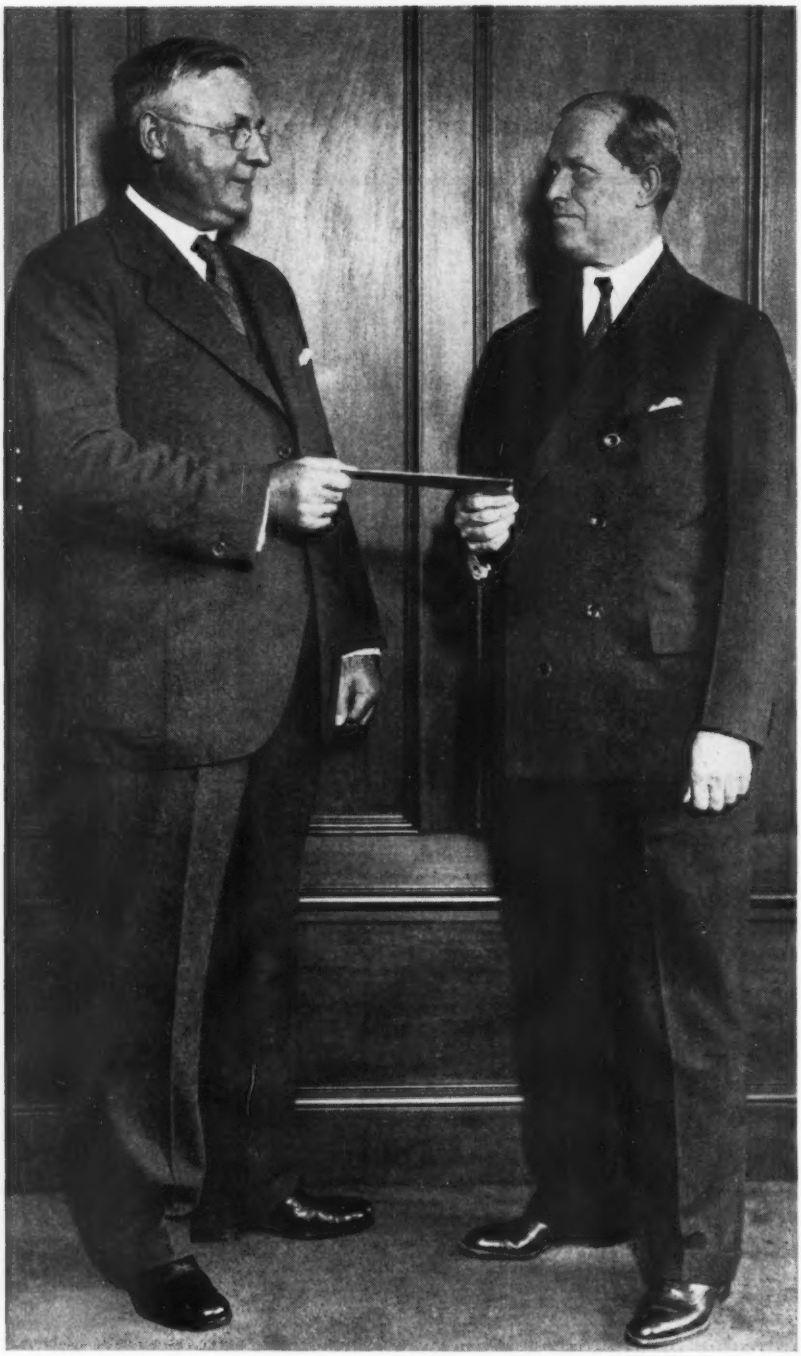
Modern Engineering Saves Drilling Crew Many a Backache..... 99
North Park Oil Wells May Double Supply of Dry Ice in U. S. 129
Eight-Stream Unit Solves Distillation Problems for Kendall Refining Co. 135
10,000 Kw. is Steam Plant By-Product at Gulf's New Power Plant..... 151

Markets

Chicago, U. S. Motor Drops 0.125 Cent..... 213
Gulf Lubes Moving Fairly Well..... 214
Mid-Continent, Refined Gasolines Quiet; Naturals Active..... 215
Refinery Price Tables.....216, 218, 219
California, Export and Domestic Markets Improve..... 222
Pennsylvania, All Commodities Quiet..... 223
Eastern, Gasoline Prices Down 0.25 Cent..... 224
Gulf, Reported Association Prices Reduced..... 224
Wax, Prices Generally Unchanged..... 225
Complete Seaboard Prices..... 226
Tank Wagon Price Tables.....228, 229
Aviation Gasoline Price Tables..... 229
Crude Oil Prices, All Fields.....231, 233

Departments

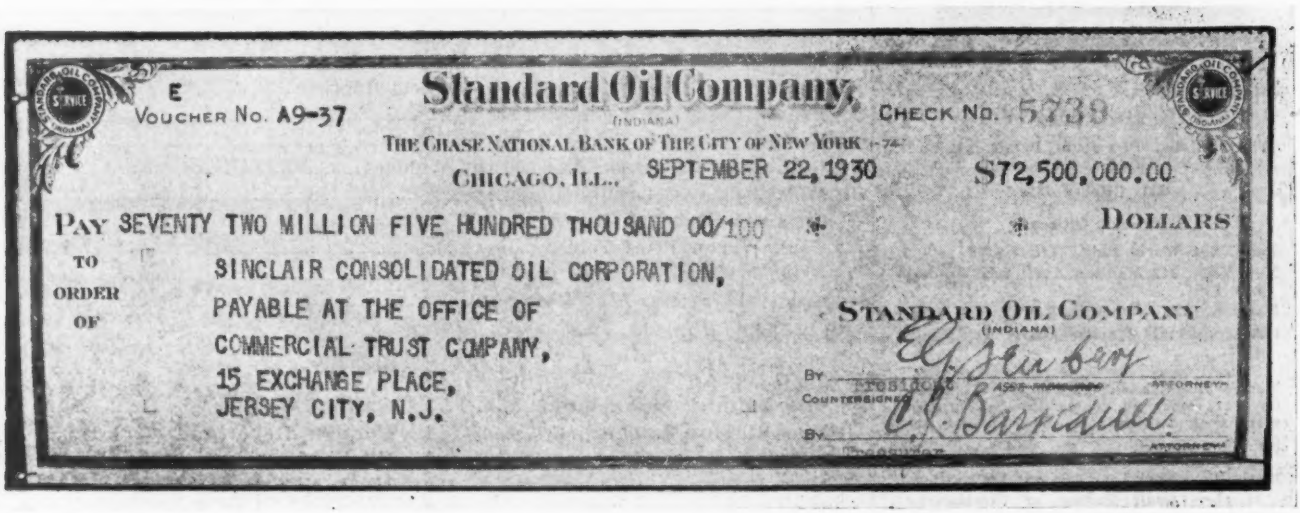
The Editors' Viewpoint..... 53
New Rifining Patents.....144, 146
New Equipment.....159, 174, 200
New Patents..... 160
New Stations Building..... 182
On the Lazy Bench.....192, 193
Foreign Opportunities..... 196
Oil Trademarks for Copyright....199
N. P. N. Service Record..... 211
Oil Company Finance....236, 237 238



EDWARD G. SEUBERT (left) Sept. 22 handed a check for $72,500,000 to Earl W. Sinclair (right) when the two oil company presidents met at Jersey City, N. J.

The transaction formally transferred the half interest of the Sinclair Consolidated Oil Corp. in the Sinclair Crude Oil Purchasing Co. and the Sinclair Pipe Line Co. to the Standard Oil Co. of Indiana. The Indiana company thus became the sole owner of the pipeline system from its refineries to the Mid-Continent and to Wyoming and 36,000,000 barrels of stored oil.

Names of the purchased companies will be changed to the Stanolind Pipe Line Co. and the Stanolind Crude Oil Purchasing Co.



E

VOUCHER NO. A9-37

Standard Oil Company,
(INDIANA)

CHECK NO. 5739

THE CHASE NATIONAL BANK OF THE CITY OF NEW YORK

CHICAGO, ILL., SEPTEMBER 22, 1930 $72,500,000.00

PAY SEVENTY TWO MILLION FIVE HUNDRED THOUSAND 00/100 DOLLARS

TO ORDER OF SINCLAIR CONSOLIDATED OIL CORPORATION,
PAYABLE AT THE OFFICE OF
COMMERCIAL TRUST COMPANY,
15 EXCHANGE PLACE,
JERSEY CITY, N.J.

STANDARD OIL COMPANY
(INDIANA)

By E G Seubert

COUNTERSIGNED

By C. E. Barnhill

NATIONAL PETROLEUM NEWS

Published at
1213 W. Third St.
Cleveland

Branch Offices
Tulsa, New York, Houston, Chicago

Vol. 22 **CLEVELAND, September 24** **No. 39**

Flexibility in Operation and Product Chief Feature of Hydrogenation

By Arch L. Foster
N. P. N. STAFF WRITER

ATLANTIC CITY, Sept. 18

FLEXIBILITY—in operation and in type of product manufactured is the keyword which describes the application of the hydrogenation process to the refining industry.

Dr. R. T. Haslam, manager of the Standard Development Co. of the Standard of New Jersey interests, developer of the process in this country, gave the first detailed report on it to the oil industry before the National Petroleum Association, at its 28th convention here.

Dr. Haslam brought out that the hydrogenation process will be commercially introduced as supplementary to the present type of refineries, instead of supplanting them.

He said that, in arranging with other oil companies to share in the early stages of commercial development of the process through the Hydro Patents Co., only companies had been considered for participation which had refineries with a capacity of 20,000 barrels a day or more.

With plants of this minimum capacity it was believed, he said, there would be material from their present type of operations to run a 5000-barrel hydrogenation unit which would give the plant a desired flexibility in operations.

Dr. Haslam showed how the industry is at present handicapped by the lack of correlation between the precentages of commercial products naturally occurring in, or producible from, existing crude oils by present methods, and the market demands for those products.

To produce the amount of gasoline now required by the industry by atmospheric distillation and by cracking, it is now necessary to produce and throw on the market for whatever price it will bring, he pointed out, some 200,000 barrels of heavy fuel oil, which is used in an uneconomic manner and from which the greatest value cannot be obtained.

A COMPLETE report of the progress in hydrogenation as presented before the National Petroleum association by Dr. Haslam will be published in NATIONAL PETROLEUM NEWS, Oct. 1st issue. This report will include plant and laboratory data tables, operation information, and other important technical information hitherto unpublished.

With the newly developed, and developing, method of hydrogenation of heavy crudes and residues to produce more of the commodities most needed by the nation, such waste and uneconomic utilization of these materials will be prevented.

"In the future, by the proper adaptation of this process" said the speaker, "it will be possible and feasible to convert any portion of the crude into the product, or products, most needed by the nation, reducing the proportion of the less desired products to the proper limits, and thus prevent to the greatest degree the waste which is now unavoidable with our present refining system."

This will be accomplished by controlling the production of each commodity and limiting it, by proper control of manufacturing operations, to just the quantity required by the world, converting the crude taken from the ground into the required proportion of each product in turn as may be needed to satisfy the market from month to month and almost from day to day.

In that case it will be necessary to draw from the ground at all times only the minimum quantity of raw material, crude, which can be utilized to the

E. L. Doheny on the Derrick Where He Got His Start

ONE of the world's vast oil fortunes piled up its first pennies on this rickety wooden oil derrick, built in 1893 by Edward L. Doheny. It was the first to take oil from the Los Angeles basin. The well still produces about 15 barrels of oil daily. This is the original location and it is now inside the city limits of Los Angeles.

The horse at the right transported the derrick to the Pan American Petroleum's refinery at Torrance, Cal., where it will remain as a relic of California's first oil days. Mr. Doheny founded the Pan American company.

Mr. Doheny is at the left and Frank R. Seaver at the right.

highest degree of economic and mechanical efficiency. Such efficiency of consumption can only be accomplished by complete flexibility in shunting the streams of crude materials into the most useful channels, which can be done by absolute control of the amount and quality of products manufactured.

According to Dr. Haslam, the hydrogenation plant of the future will have this flexibility inherent in the nature of the process and the design of the plant. To obtain the greatest variety in type and quantity of products it will neither be necessary to change the construction of the existing plant, nor to dismantle it and build a new one. Such adaptability will be achieved by varying the conditions of operation alone, it appears to the technologists now engaged in developing the new process.

One of the first difficulties which confronted the engineers and chemists of the I. G. Farbenindustrie's research staff when they undertook to develop the process first studied by F. Bergius, was the ferreting out of a catalyst that would be unaffected by impurities, especially sulfur, occurring naturally in coal and petroleum.

Earlier attempts at hydrogenation of organic materials, such as cotton oil, which normally do not contain appreciable amounts of sulfur, were accomplished only by rigid exclusion from the reaction of such "poisons." I. G. engineers have produced catalysts, oxides of the heavier metals, which are unaffected by sulfur.

While final results of hydrogenation, on a commercial scale have not been obtained in such completeness as to warrant publication at the present time, they have already demonstrated conclusively that data obtained on the "half-barrel" scale can be reproduced completely on a "hundred barrel scale." The Standard Oil Co. of New Jersey interests are now building two large units in the southwest and one on the Atlantic coast, of such size as to demonstrate that the purely experimental stage has been passed in the hydrogenation process.

Five Major Uses

Dr. Haslam designated five major applications of the process to present-day refining of crude and its fractions.

1. The conversion of high sulfur asphaltic residues to gasoline, gas oil, etc. From experimental results already corroborated, the yields from this method of operation are about 30 per cent of gasoline and 71 per cent of gas oil, a total yield of 101 per cent of the charging stock, said Dr. Haslam. This gas oil can be cracked in the existing processes, if desirable, to produce high anti-knock gasoline, the residue being again hydrogenated and recycled to achieve practically 100 per cent recovery as naphtha of the gasoline range.

2. High sulfur, low gravity and viscosity index, Mid-Continent lubricating stocks are transformed into lubricants of high gravity, high viscosity, index, similar to paraffinic products of the Pennsylvania type. These lubricating fractions show also a much higher flash point than before treatment, as was illustrated in data shown at the meeting, flash points as high as 485 F. being obtained in fractions of the heavy motor oil grade.

Conradson carbon residue results are much lower on these oils than with present day oils of conventional manufacture and similar gravity and viscosity ranges, being of the order of 0.13 per cent, as compared to 1.2 to 1.5 per cent for commercial oils as now made by older methods. The speaker

(*Continued on Page* 54)

The Editors' Viewpoint

Selling Tires at Oil Stations?

ANNOUNCEMENT that Standard Oil stations over the country are going to sell one brand of tires will focus the attention of oil marketing companies big and little on this possible extension of the gasoline station business.

In this connection there are certain fundamental questions which it would seem the oil company must decide before it makes up its mind whether to sell tires at its stations and through dealer outlets. These questions are pretty much the same, whether the oil company considering handling tires is an integrated company operating over large territory, or a local marketing company with stations in one city or town only.

Certainly any oil company, or even individual station owner, should not decide to carry tires simply because the Standard Oil stations are to carry them. On their part the Standard Oil companies must have considered the matter a long time, and from many points of view, before launching on a merchandising plan which is the direct opposite of their former policy of handling petroleum products exclusively through their own stations.

As far as an oil marketing company is concerned, it would seem that the first point to be considered is what effect the handling of tires, and perhaps other merchandise, as a company policy would have on its gasoline and oil sales.

The oil company is first of all in the oil business. In the case of the larger company it has its own production and refineries. The business of its stations, as of its marketing department generally, is to move its supplies of gasoline, oil and other products.

Will the handling of tires at stations allow the sale of more gasoline and oil? Will it detract from the present gasoline volume through putting another merchandising problem before the sales department? Would the same sales effort that is to be put into handling tires, if applied to gasoline and oil, stimulate that business to a material extent? Will the handling of tires at oil stations bring new tire dealers into the gasoline business?

Various oil companies will probably answer these and other questions differently, according to the setup of personnel and station properties, nature of the company's dealer trade and so on. But certainly every effort should be made by the oil company to answer them intelligently before a decision on tires is made.

Another question that seems fundamental is what effect on the tire business in the individual oil company's territory—large or small—the sale of tires at that company's stations will bring about.

How many tires per year can be sold in the territory can be fairly closely estimated, and through what number and type of present outlets. Some idea of how much tire business on the average the oil company station can hope to secure can be arrived at, the answer to this depending largely on what inducements in price and service on tires the oil company can offer which are not now being given by existing outlets.

A study of this question from all angles will help the oil company in arriving at its decision regarding tires.

Closely akin to this is the point as to the additional investment necessary for the oil company to go into the tire business. The volume of stock in tires each station will have to carry must be decided, at how many stations tires need to be carried, where central stocks can be stored and how distributed to the individual stations, to what extent service and repair work on tires must be given and so on.

An important point will be the investment that must be made in changing over stations so that tires can be efficiently handled and displayed. Stations of some oil companies are so laid out that tires can be stocked and displayed at relatively little expense in making over the station. With other companies the expense of getting the station ready to carry tires might run into several hundred dollars for each station.

Another factor to be considered would be the training and nature of the sales department of the oil company down through the station personnel. With some companies the sales department might be merchandise minded. It might have been at least considering in the past the selling of commodities through stations, rather than regarding them as outlets for petroleum products only. With sales departments of this type the readjustment to handling tires through stations would not be as difficult as with sales departments of another type.

It is doubtful if a cut and dried answer could be given now to the question should the oil company station sell tires. In the past some oil companies have done it successively and some have tried it and given it up. It should be tackled by the oil company now only after the most intelligent study possible of the individual case.—V. B. G.

(*Continued from Page 52*)

stated that, while carbon residue did not always tell the whole story as to the relative amount of carbon deposited in an engine cylinder, correlated tests in actual operation of engines show that the carbon deposit by hydrogenated oils is only half to two-thirds as large in quantity as that from other types of oils of similar grade.

3. Manufacture of first grade burning oils, such as kerosine, from lower gravity oils of the gas oil range is another major application of the process. Sulfur in these products is reduced far below present standards, the oils are water white, gum and other objectionable materials are eliminated, according to the results obtained, a considerable amount of data being shown to support the statements made.

4. Cracked distillate from conventional cracking processes has been treated by hydrogenation, reducing the sulfur content to well within present accepted commercial limits, of the order of 0.01 to 0.03 per cent, according to data presented. Gum and gum-forming materials are eliminated without acid treatment, with its attendant high costs and higher refining losses, resulting in water white fuels of practically no sulfur content, and no gum formation on storing.

5. Conversion of high sulfur gas oils to low sulfur, gumless, water white gasoline by hydrogenation, such products requiring little or no further treatment to fit them for commercial use, is another employment of the process, which bids fair to solve the problem of disposal of the excess fractions of the gas oil range now cracked or otherwise disposed of in a less economical and more wasteful manner. This application is similar to the first one given above, the hydrogenation of heavy residues.

In discussing the application of hydrogenation to the refining industry, Dr. Haslam stated that the refiner should think of the matter as a method instead of a process; that it is an adjunct to present day operation, enabling the refiner to control his output and products; a method for the solution of treating problems now unsolved, or handled in a comparatively very expensive, wasteful, and unsatisfactory manner.

Photo by Blank-Stoller, Inc.

Dr. R. T. Haslam

The method is so adaptable and flexible that conditions of operation may be changed without shutting down a unit, to produce the widest variety of products and to vary the properties of the desired products over a wide range, to meet existing requirements or market conditions.

Principles of Operation

As has been known by many technologists, the cost of hydrogen production has been one of the major difficulties to be overcome in the development of the process to a point of economic feasibility. According to the speaker, several methods of hydrogen manufacture are available.

One of these methods is by the production of water gas from coal or coke, and water in the form of steam. The reaction between superheated coke and steam is;

$$C + H_2O = CO + H_2.$$

A somewhat similar reaction takes place between natural gas hydrocarbons and superheated steam, the equation being essentially the following;

$$CH_4 + H_2O = CO + 3H_2.$$

In either case the carbon monoxide, CO, formed may be converted to carbon dioxide, CO_2, by further oxidation, may be removed by absorption, refrigeration, or other means, thus purifying the hydrogen for use in the process. On account of the large amounts of natural and refinery gas produced in proximity to oil, and the cheapness of this raw material, it appears that the last method is the suitable and economic one for hydrogen production for the new process.

In operation of the plant the charging stock, and purified hydrogen under pressure, are passed through heat exchangers, where a transfer of heat, from the reaction products already passed through the system to the incoming materials, takes place; oil and gas then pass through heating coils under pressure, and are forced into the reaction chamber in contact with the catalyst, here reaction is completed to the degree depending on the operating conditions employed. After passing from this chamber to the heat exchangers as before indicated, and through coolers, the product passes to run-down storage, and the cycle is complete.

The speaker stated that it is the "intensity of hydrogenation" which determines the properties of the products from any given charging stock. After passing through the reaction cycle the remaining hydrogen is scrubbed to remove hydrogen sulfide formed during the reaction, and is then returned to storage to be reused until consumed.

Questioned regarding the life of the catalyst used, Dr. Haslam stated that it may be used apparently for a practically indefinite period, or so long that the unit cost of catalyst becomes a negligible factor in the total cost of manufacture. Plants in Germany have operated for periods eight or nine months or longer, without vitiating the activity of the catalyst. Such long runs have not been carried out in this country so far, on account of the experimental nature of the work, which has shortened the runs for reasons of change of design, to profit by experience gained during operation, and not for any reasons traceable to the catalyst.

E. M. Lyons Reelected President Of N. P. A. for Fourth Term

ATLANTIC CITY, Sept. 19 E. M. LYONS of the Tiona Refining Co. was re-elected as president for his fourth term at the 28th annual meeting of the National Petroleum Association meeting Sept. 17, 18, 19.

All other officers also were re-elected, P. S. Tarbox of Independent Refining Co. as first vice-president; N. H. Weber of the Pure Oil Co., second vice-president; Fayette B. Dow as general counsel; Willis Crane, traffic attorney; H. G. Eaton of Valvoline Oil Co., recording secretary; E. W. Smiley of the Superior Oil Works, assistant recording secretary, and Guy B. Hunter of Emlenton Refining Co., treasurer.

New Board of Trustees

The new board of trustees elected by the Association on Wednesday afternoon, includes three new names. The board members are as follows: Fred G. Clark, Conewango Refining Co.; Sheldon Clark, Sinclair Refining Co.; E. M. Craig, Freedom Oil Works Co.; G. C. Davison, Tri-State Refining Co.; O. D. Donnell, Mid-Kansas Oil & Gas Co. (New); F. B. Fretter, National Refining Co.; T. J. Hilliard, Waverley Oil Works Co; W. T. Holliday, Standard Oil Co. of Ohio; W. V. Hartmann, Gulf Refining Co.; O. P. Keeney, Keeney Oil Co.; H. A. Logan, United Refining Co.; E. M. Lyons, Tiona Refining Co.; Chas. L. Suhr, Pennzoil Co. (New); Otto Koch, Kendall Refining Co.; A. W. Scott, Empire Oil Works Co.; C. G. Sheffield, Standard Oil Co. of New Jersey; J. H. Graham, Indian Refining Co. (New); P. S. Tarbox, Independent Refining Co.; R. A. Wotowitch, Empire Oil & Ref. Co.; N. H. Weber, Pure Oil Co.; A. C. Woodman, Richfield Oil Co. of New York.

The annual dinner of the association was held at the Shelburne on Thursday and was attended by more than a hundred members including the wives of many of them. At the dinner the features were an informal talk by Fayette B. Dow on fellowship and the value and results of co-operative effort; a bronze plaque was presented by R. A. Wotowitch, trustee in charge of fire and safety, to the Conewango Refining Co. first aid team, represented by Harry R. Lewis, Conewango's general manager, for the team's victory in the first aid contest held at Cleveland during the spring meeting last April.

This plaque is to be competed for each year, to be held by the winning team for one year, provision being made for inscribing the name of the winning team after each contest.

Another entertainment feature thoroughly enjoyed by everyone was the luncheon given Thursday afternoon to the members by the Sinclair Refining Co., at the club house of the Sea View Golf Club. The lunch was excellent and ample, fellowship universal, and after luncheon a large number of golf fans took advantage of the invitation to play on the club links.

At the opening meeting the president gave a resume of the accomplishments of the association for the year. Members will be saved about $100,000 a year by the reduction in insurance rates; fullers earth rates, and coal rates have been reduced in several cases, effecting large savings to Pennsylvania refiners.

Herbert Ross reported that a further reduction in the coal consumption per barrel of refinery throughput due to co-operative study of heat efficiency and the improvement of firing methods. Companies are to furnish Mr. Ross with one coal analysis each per month throughout the year, and small test furnaces are to be erected for coal testing.

G. B. Hunter reported that the finances of the association are in a healthy condition, although no great surplus of funds is on hand, the total, including unpaid dues being approximately $1200.

The paper on the high cost of storing gasoline, printed in full in the Sept. 17th issue of NATIONAL PETROLEUM NEWS was read by F. B. Dow, general counsel, in the absence of Dr. Joseph E. Pouges, the author.

Oil companies were among the first to recognize the value of radio broadcasting and of private radio communication to the industry, and early began to utilize this means of shortening the effective distance between office and plant, between customers and sales organizations, and for carrying out geophysical studies, according to the report of H. L. Lohnes, assistant general counsel. The author traced the development of radio in the United States up to the present time when 122 stations are licensed for the use of oil companies in geophysical work.

In 1912 Congress passed an act empowering the Dept. of Commerce to regulate radio communication, which proved to be totally inadequate to cope with the situation because of the phenomenal growth of radio immediately following the World War, and chaos reigned.

SPACE limitations of the current issue prevented publication of the papers presented before the National Petroleum Association by Norman N. Day of the Pennzoil Co., and the speakers who dealt with aviation gasolines and the progress of aviation. In the October 1 issue Mr. Day's paper will be presented in full and summaries will be given of the data on aviation gasolines.

E. M. Lyons

"While all this was taking place," said Mr. Lohnes, "Nero fiddled on Capitol Hill, trying to determine whether radio communication should be vested in a new commission or allowed to remain with the Secretary of Commerce."

When the Federal Radio Commission began to investigate the chaotic situation it found highly valuable frequencies being used by the oil companies for prospecting purposes, and, although first minded to refuse the use of radio for these purposes, was finally induced to assign for such use five specific frequencies in the "continental mobile band" which may be used by stations up to 10 watts in power, and in special situations 50 watts may be licensed.

To handle the situation in the southwest the arrangements were finally made to form a single communication company to take over the work of all stations in Texas, Oklahoma and Kansas as a public service company, and this organization has been tentatively assigned nine communication bands. Ship-to-shore, shore-to-ship, and trans-oceanic communication companies have been organized by several oil companies, and their use as well as of the familiar broadcasting programs for advertising purposes is universally known.

The Washington office has been active in furthering the interests of the oil industry in radio in the capital, having been directly or indirectly instrumental in securing each of the 122 licenses so far issued, association counsel have appeared before the commission in numerous cases of general interest to the industry and in behalf of several individual companies interested in broadcasting stations.

Fundamental economics of supply and demand were discussed in a paper entitled "The Real Marketing Problem," prepared by Richard B. Kahle, president, Beacon Oil Co., and read in his absence. Since the oil industry has no means of increasing, through its own efforts, the general market for its principal products, he pointed out, if it would content itself with manufacturing enough to meet demand, but not over supplying the market, then there would be adequate profits for the companies operating efficiently. Too great a supply overcomes all this, he pointed out, and makes individual initiative of little avail.

Battenfeld and Stevens Companies Merged

KANSAS CITY, Sept. 22.—Merger of the Battenfeld Grease and Oil Corp. and the A. J. Stevens Grease & Oil Co., both of Kansas City, has been agreed on by stockholders of both companies. The merger will be consummated by an exchange of stock.

Plants of the two companies are located within a block of each other on Roanoke road in Kansas City. The two have an annual grease capacity of 60,000,000 pounds which make the merged company one of the largest grease manufacturers in the world.

The Battenfeld company was organized by J. R. Battenfeld in 1919 to serve the jobbing trade only. It has grown rapidly since that time. The A. J. Stevens Grease & Oil Co. was organized by Mr. Stevens after he left the old Stevens Oil & Grease Co. of Cleveland. With J. A. Cannon he took over the Kansas City branch plant of the old Stevens company. The new company was one of the first to develop and market aluminum stearate greases.

Mr. Stevens will remain with the enlarged Battenfeld organization in an executive capacity. He will continue to call on the jobbing trade from time to time to give customers the benefit of his long experience in greasing problems.

Trite but True: Many Marketers Don't Know Costs, Says «Ike»

By Roger B. Stafford
N. P. N. STAFF WRITER

COLUMBUS, O., Sept. 18

I G. "IKE" MONROE, field representative of the Ohio Petroleum Marketers Association, held a clinic over the Independent marketer here Sept. 18 at the association's fall meeting. The clinic was one of the several addresses on the general subject "What's Ahead?"

According to "Dr." Monroe's diagnosis, although the Independent marketer of the last year or two has had a fever, he's not been so hot. Many—a great many, Mr. Monroe declares—are operating unsoundly. Mainly, Mr. Monroe said in substance, "They don't know their costs."

Too many have inadequate accounting systems. They don't know where their finances stand until the sheriff or the major company buyer arrives to appraise their assets—if any. A few don't even have vestpocket account books—they rely on checkbook stubs until the banker says the account is overdrawn.

Mr. Monroe didn't use those exact words but that is the theme of his discourse on "What's Ahead for the Independent Marketer?"

Not being first rate business men did not cause all Independent marketers to sell out, Mr. Monroe indicated. A good many of them became panicky when the majors offered active competition after their chief competitor had been rejuvenated. He cited one case of an Independent who offered a sizable sum for cancellation of his sales contract within 48 hours after he had signed it.

The major companies when they became active marketers spent large sums improving their outlets, Mr. Monroe said. It was necessary for the Independents to make improvements and this expense became a burden to some. When the opportunity came to sell, they sold. Others who followed the new order of marketing were successful and became so attractive to some major companies that such large offers were made that these progressive Independents that they could not afford not to sell.

But all prices have not been so attractive. Mr. Monroe cited one case where the marketer received $4.75 for his assets after the bills had been paid. In another case the seller had to give the buyer several dollars to square accounts. It was of this class that Mr. Monroe made his diagnosis.

"What is the cost of unloading a tank car of gasoline?" he asked. "What is the cost of trucking in the city? What is the cost of trucking in the county? What is the cost of selling at service stations?"

Some marketers extend too much credit, he said. Others err in their judgment. He cited the case of an Ohio marketer who built a $15,000 service station two and a half miles out of a town and 22 miles from the worst price center in the state. The gallonage was insufficient to carry the station. The marketer cut his price to increase his gallonage. That price cut spread through three or four counties before it was stopped.

Mr. Monroe urged that marketers heed the fact that two thirds of standard commodities are bought on brands. The manufacturer may advertise the brand, whether soap, or cornflakes or gasoline and oil, but the distributor should advertise to tell the public where the particular brand may be bought.

Mr. Monroe said he could see only failure ahead for the marketer who devoted 30 hours a week to business and 20 to golf. For the Independent who is operating on a sound basis, he saw a future.

"If I were in business as an Independent marketer," he concluded, "I would work to put the code in effect. The smaller I was the harder I'd work."

Cost of Truck Deliveries

One of the Independents that knows its costs is the Pearl Oil Co. of Bowling Green. J. R. McElroy in a discussion of "What's Ahead in Farm and Commercial Business?" presented these delivery figures for 1929 by two of his 1½-ton trucks. Grease pounds are reduced to gallons:

	No. 8 Truck	No. 9 Truck
Gasoline delivered....	231,813	200,210
Kerosine delivered	37,394	36,512
Lubes delivered.....	10,322	6,596
Grease delivered.....	5,609	2,865
Credit Sales	$31,617.12	$28,229.10
Cash sales	$15,559.55	$12,008.55
Cost of delivery*.....	$2,657.68	$2,573.51
Average per gallon	0.95c	1.06c

*Gasoline, oil, tires, payroll, repairs, depreciation, insurance.

The following results were for a 2½-ton truck making only service station deliveries: in seven months' operation:

Gasoline, 372,252 gallons; kerosine, 2316 gallons; lubes, 6213 gallons; grease 1157 pounds; credit sales $25,929.70; cash sales $35,299.70; general expense $800.09; payroll, $875; depreciation $360; insurance $90; total cost $2125.09. Average cost per gallon, 0.55 cent.

A sad feature of the rural business, said Mr. McElroy, was the credit required to get the volume of business necessary to hold operating expenses down.

In 1929 the Pearl company charged 2 cents a gallon on gasoline sales. Competitors said this amount figured out 12½ per cent whereas money could

be borrowed for 7 per cent, Mr. McElroy said. That criticism was welcomed, he added, saying that this year the company is giving the regular commercial discount with 60 days' credit but charging interest on all accounts that run longer than 60 days.

The farm and commercial account is here to stay, Mr. McElroy asserted. It has attained a great volume and is growing. It is no different from any other business, he concluded, and can be made profitable if handled in a conservative business-like manner.

Low Price Station Will Stay

E. H. Jaeger, Fremont Oil Co., Dayton, said he believed the man that sells gasoline at a lower price than is common at most oil company stations has a place in the economic set-up of our industry. He discussed "What's Ahead for Cut Rate Stations?" He classified cut rate stations as fair and unfair. In the unfair class he put the operators who cut price regardless of his operating costs. In the fair class he put the operators who passed along to their public any savings or part of savings made in operating set-up and costs.

There are different classes of hotels, restaurants and department stores, Mr. Jaeger pointed out. The same difference may exist in service stations. A modest station on a railroad siding may afford to sell at a lower price than the elaborate station with a lot of expensive services given free.

C. B. Dilley, Benzol Gas Corp., Akron, declared some oil men overlook the clever merchandising practices of some price cutters. Numerous low price stations, he said, were attractive but not elaborate. They were clean and well kept.

The growing gasoline tax came in for condemnation. John L. Marsh, Youngstown, former president of the association, warned of its increase. Hubert B. Fuller, Cleveland, counsel for the association, recounted evils under the present tax laws and some of the remedies that will be sought from the next General Assembly of Ohio.

Mr. Marsh, an old "war horse" of the Ohio marketers, in summarizing "What's Ahead for Aggressive, Fair and Honest Leadership for the Oil Industry in Ohio?" said there would be a lot of hell for them just as for any other leader from the beginning of time.

He warned his former fellows against another increase in the Ohio tax in spite of platform pledges against a gasoline tax increase by both major political parties.

Mr. Marsh said the tax had resulted in waste and was fostered by the Good Roads Federation so that road building material and machinery men might profit. Unless oil men consider the tax seriously and organize strongly they may be saddled with a 6 or 7-cent tax, he warned.

Mr. Fuller brought out that this year's gasoline taxes in the United States will amount to about $500,000,000, a sum almost half that required to operate all branches of the federal government including the army and navy in the years just preceding the World War.

Mr. Fuller listed several proposals for tax law amendments. These include giving the state tax commission authority to vary the size of bonds required of marketers so as to minimize evasions; a percentage of the gasoline tax receipts allotted marketers to cover losses and collection expenses, and elimination of refunds.

Mr. Marsh declared the lease and agency contracts were a subterfuge to evade the code of ethics. These contracts, he added, did more to break the spirit of the code than any one other thing.

This year is a marketer's year, Mr. Marsh said, and marketers should discourage any act that would tend to disrupt the only division of our industry that has a chance to make a fair profit.

P. H. Harrison, Detroit, manager of Sun Oil Co. distribution for this region, declared the authority of the code of ethics comes from the individual signers. Sincerity, integrity, honesty and courage were its cornerstones, he said.

Mr. Harrison said the strong members of the industry should assume leadership and set an honest example.

"The future of the code will not then be in doubt," he added.

Success of Code Is Assured

Mr. Harrison said too much cannot be expected of the code, that no great reforms could come in the time the code has been in force. It has ceased making oil companies purchasing agents for dealer outlets, he said.

"I believe the code is the foundation upon which our industry must be built to withstand the storms of the future," he asserted.

"What's Ahead for U. S. Motor Gasoline?" by Paul G. Blazer, Ashland Refining Co. will be relayed to NATIONAL PETROLEUM NEWS readers in a later issue.

W. A. Milne, executive secretary of the Ohio association, said the difficulties of some state marketers' associations lay in the belief that their interests are against those of the major companies. The Ohio association, he said, is for the industry as a whole. Major companies are paying 16 per cent of the dues of this association; the Independents 84 per cent. The association has a bank balance larger than the total annual dues four years ago.

Prices of $10 and $5 for good suggestions from the floor were won by E. G. Vorwerk, Home Oil Co., Napoleon, and F. B. Samuel, Citizens Oil & Gas Co., Canton, respectively. Mr. Vorwerk suggested that giving of no commissions on sales of less than 25 gallons of gasoline by tank wagon, would help lower delivery costs by stimulating drivers to greater sales effort. Mr. Samuel suggested that Ohio marketers approve the present method of taxing gasoline on sales rather than receipts but that a 3 per cent allowance be worked for. It has been suggested that the Ohio association approve a tax on receipts with allowance for losses.

Pielsticker in Hospital

TULSA, Sept. 20.—F. A. Pielsticker, vice president of Skelly Oil Co., with headquarters at El Dorado, Kan., was removed to a hospital at that city Sept. 19 because of illness. Reports to friends here Sept. 20 indicated he was showing some improvement.

Gasoline Dumping Brings Price Cuts In Detroit and Ohio Points

A 5½-cent reduction in the service station price of gasoline in Detroit last week resulted in a three-sided attack on major oil companies.

Ten Independent jobbers in Detroit went into U. S. District Court charging five major companies with combination in restraint of trade and with threatening a price war unless smaller distributors did not stay within 2 cents of the posted price. The ten ask damages of $1,000,000 and that the court revoke the defendants' franchise to do business in Michigan.

Attention of eight major distributors in Detroit was called to the Michigan law requiring petroleum products to be sold by one company at the same price over the state, except for difference in quality and freight.

Citizens in Bay City went to court asking that gasoline in Bay City be reduced to the Detroit level under the anti-discrimination law.

A quick readjustment of the Detroit price situation, or a legal battle under the anti-discrimination law, was forecast today from the county prosecutor's office. If the Detroit price is not raised, or the state price level reduced to that in Detroit by mid-week, action was to be taken, it was said.

Following a summer in which Detroit was a dumping ground for excess gasoline, and retail outlets posted a price 3 cents below that of the Standard Oil Co. of Indiana, a 3-cent price reduction was made by that company effective Sept. 13. Four days later, on Sept. 17, a further reduction of 2½ cents was made. This brought gasoline to "7 gallons for $1," with most service stations, and few bulk service stations dropped to "8 gallons for $1."

Major oil companies named in the bill of complaint in Federal court are White Star Refining Co., Standard Oil Co. of Indiana, Shell Petroleum Corp., Sun Oil Co., and the Sinclair Refining Co. The plaintiffs are Wayside Oil Corp., Yellow & Black, Inc., Moon Oil Co., Paramount Petroleum Co., Dynamic Oil Co., Cass Auto Service Co., Dearborn Oil Co., Petroleum Services, Inc., Plymouth Road

Why Drag Premium Gasolines Into Gutter Fight?

PRICE wars always appear foolish to us. The present price wars in Detroit and Akron seem worse than those which have broken out sporadically in years past because most distributors are now marketing a quality branded anti-knock gasoline, whose name is worthy of protection, as their low test or regular motor fuel.

In Akron one sees such gasolines as Texaco, Sunoco, Canfield New Gas, Red Crown Amber selling at 10 cents a gallon, without tax, in price competition with gasolines that knock so badly they almost pound out the cylinder head if one tries to climb a hill in high or make a quick getaway in traffic.

One cannot help but think that the oil companies who are putting out these branded motor fuels are spending hundreds of thousands in magazine, newspaper and billboard advertising to impress upon the public the premium qualities of their gasolines; but that their agents and dealers in Akron are destroying the full effect of this advertising by dragging these brands into a price war, meeting the competition of the lowest quality, unbranded motor fuel sold in that territory.

It was estimated at the Ohio Petroleum Marketers convention in Columbus last week that Akron prices were costing the marketers of that city $350,000 a month. That estimate was made when the general Ohio structure was 21 cents a gallon, including 4-cent tax. The Akron price at the time was 14 cents including the tax, or 10 cents net for the gasoline.

Only one marketer had nerve enough to hold his prices above the general low level. He was charging 16 cents for his regular grade. If the other large distributors had followed his lead they would be saving themselves $100,000 a month in Akron, if the estimate made at Columbus is anywhere near right.

With a small fraction of that saving, it seems to us, sufficient advertising could be bought in Akron newspapers to tell the public that quality gasoline cannot be given away, and, furthermore, it cannot be sold in price competition with gasoline that has far less anti-knock property.

We can see no reason for dragging quality gasoline in the dirt in order to spank some price cutter. The public only stands on the sidelines and laughs while the marketers are cutting the throats of one another. The public is willing to pay the price and present prices are not unreasonable for the quality of motor fuel that is being marketed by the reputable companies.

We doubt that any side in the war will be victorious. Both sides are sure to suffer financial losses and possibly losses in public esteem. Why not bury the cudgels and get back on a profitable basis?—R. B. S.

Oil Co., and the Val Petroleum Co. Suit was filed Sept. 18.

The Independent jobbers' petition claims the defendants are foreign companies, while the plaintiffs are local organizations in Wayne county, hence suit is brought in Federal court.

Also that they were selling gasoline and other petroleum products below the price posted by Standard Oil and making a fair profit. That they did not resort to secret rebates, as had been common practice among the defendants.

That the defendants had conspired to establish the price and to prevent unrestrained competition. That representatives of the defendants approached members of the plaintiffs threatening a price war in case the difference in gasoline prices was more than 2 cents.

That the big companies have been buying smaller companies to stifle competition, and that the White Star Refining Co., a former Detroit organization, has passed to the control of Vacuum Oil Co., which was attempting a consolidation with the Standard Oil Co. of New York.

Violation of Michigan's anti-discrimination law was cited in the petition also.

The following statement printed in Detroit newspapers Sept. 13 and 14, made by H. B. Earhart, president of White Star, is quoted in the petition:

"The present reduced price of gasoline is below the cost of production, manufacturing and distribution — Michigan has been a dumping ground for surplus gasoline in the hands of certain refiners in other states."

Another quotation from a newspaper of Sept. 18, made by Mr. Earhart, is included; "—These surpluses were presumably created by their too great optimism of early resumption of normalcy of business in general. They, perhaps not unnaturally, have been dumping these surpluses, regardless of cost, where it will do their own principal markets the least harm, with little or no regard for the hardship imposed upon their neighbors.

"As a result, the tank car prices in this neighborhood have been 2 to 3 cents per gallon below surrounding states for some time. As a result of this temporary situation, so-called cut-price stations in this community have been increased to a point where, as a defensive measure, we have felt it necessary to meet their competition and protect our business."

The eight companies warned by the county prosecutor's office are The Texas Co., Sun Oil Co., Gulf Refining Co., Hickock Oil Corp., Standard Oil Co. of Indiana, Sinclair Refining Co., White Star Refining Co., and Shell Petroleum Corp.

The letter, dated Sept. 20, follows:

"In view of complaints made to this office concerning the present price-war governing the sale of gasoline in this community you will please find enclosed herewith a copy of the law governing the situation, and unless this matter is immediately adjusted among yourselves, it will be necessary, upon the proper proof being presented to this office, that we proceed as directed in Sect. 15044 of the compiled laws of 1915."

The Michigan law has been upheld by the U. S. Supreme Court, Prosecutor Krise said. Local jobbers report the price situation between cut rate and old line companies widened last April 12 when Standard advanced Detroit 1 cent. Some stations stood pat so the gap in retail prices widened from 2 to 3 cents. Gasoline has been dumped in Detroit over the summer by the Standard Oil Co. of Ohio, Sinclair, Shell, Pure Oil Co. through Hickock, and the Lincoln Oil Refining Co., one jobber charged. About 100 stations were selling at 3 cents under the posted price, it is estimated. Detroit newspapers report that from 40 to 50 stations have closed through the price war. A jobber reported these were individual stations, buying off any tank wagon, without a contract.

* * *

AKRON, O., Sept. 22.—Akron's price war began Aug. 29, when a low price company advertised it would cut its price to 18 cents a gallon over the Labor Day holiday. The general structure was 21 cents including the 4-cent Ohio tax. The old line companies immediately met the 18 cent price with a 3-cent cut.

The price was reduced 1 cent Sept. 3 by the old line companies to meet a new posting of two cut rate companies. The price was pegged at 17 cents for 10 days when it fell another 1 cent Sept. 13. The next day the market went down to 16 cents and the following day was lowered to 14 cents by all but the C. A. Pierce Oil Co., which held to 16 cents.

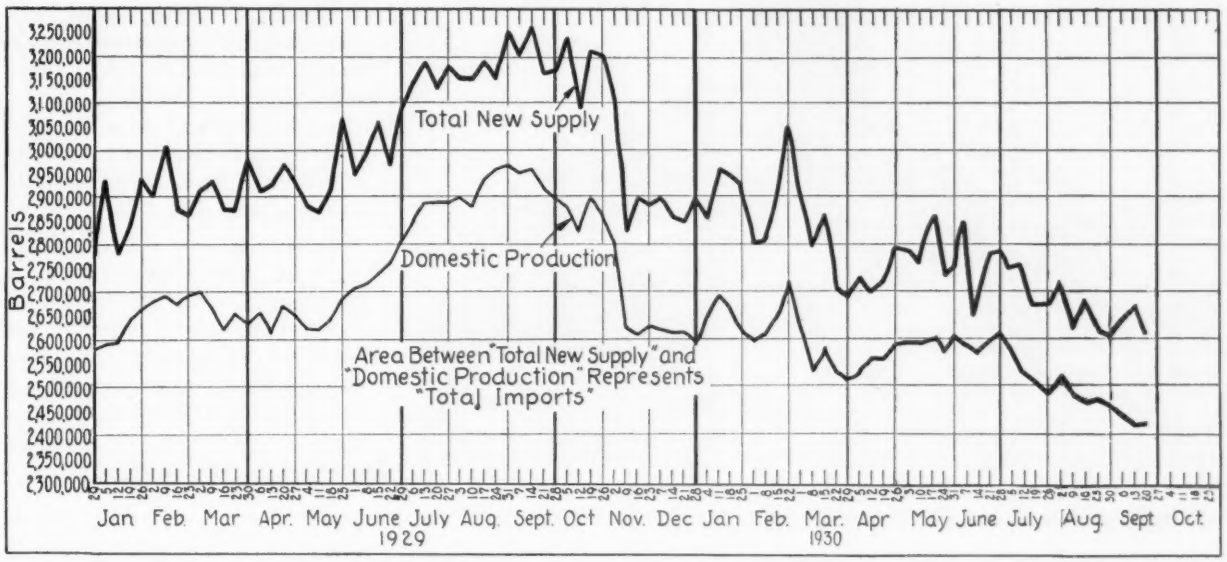
The price in the populous country districts around Akron was held at 18 cents from Sept. 3 to Sept. 19 when a 4-cent reduction was made to 14 cents.

Price cutting has spread to counties around Summit county, of which Akron is the seat. Canton and Stark counties are down to 16 cents.

Service Station Gasoline Price Cuts the Last Few Months in Major Markets

Aug. 13—2 cents, Albuquerque, N. M.
Aug. 16—2 cents, Nashville, Tenn.
Aug. 23—2 cents, Lucas (Toledo) and Williams counties, Ohio.
Aug. 23—1 cent, New Orleans.
Aug. 26—3.8 cents, Huron, S. D.
Aug. 27—2 cents, Savannah, Ga.
Aug. 29—2 cents, Summit county, O. (Akron).
Aug. 30—2 cents, Wood county, O.
Aug. 30—3 cents, Des Moines, Iowa.
Sept. 2—2 cents, Little Rock, Ark.
Sept. 3—1 cent, Summit county, O., (Akron).
Sept. 3—3 cents, Stark county, O., (Canton).
Sept. 3—2.3 cents, Indianapolis, Ind.
Sept. 3—3 cents, Kansas City, Mo.
Sept. 4—3 cents, Fort Smith, Ark.
Sept. 8—1.3 cents, Petersburg, Va.
Sept. 8—2 cents, Metropolitan New York.
Sept. 11—3 cents, Richland county, O., (Mansfield).
Sept. 11—2.2 cents, Minneapolis, Minn.
Sept. 13—2.1 cents, Milwaukee, Wis.
Sept. 13—2 cents, Detroit.
Sept. 13—1 cent, Akron.
Sept. 14—1 cent, Akron.
Sept. 15—2 cents, Akron.
Sept. 15—2 cents, Miami and Shelby counties, O. (Piqua).
Sept. 15—3 cents, Montgomery county, O., (Dayton).
Sept. 17—2.5 cents, Detroit and other Michigan cities.
Sept. 18—2 cents, in Ohio except cut price territory.
Sept. 19—4 cents, Summit county, O., meeting Akron prices.
Sept. 19—2 cents, Stark county, O., (Canton).

Review of Late Production News



Daily Average Crude Oil Production and Imports Based on Current Reports of American Petroleum Institute

PRODUCTION the week ended Sept. 20 was on a more even basis than for many months. Daily average increased but 2050 barrels over the previous week, to 2,421,800 barrels, according to the American Petroleum Institute.

Oklahoma, Kansas

STRIKING 15 million cubic feet of wet gas in Harper county in the deep test drilled there by the Sinclair Oil & Gas Co. attracted considerable attention to this area during the week.

The wildcat north of Oklahoma City, southwest of Edmond, responded to a shot, increasing its production to 750 barrels. Seventy four feet of sand have been drilled. It is probable that the well will be shut in, and no offsets started for some time.

California

CALIFORNIA operators adopted the contemplated reduction in state-wide crude output the past week. This cut will limit the total allowable amount to 550,000 barrels daily until Jan. 1, 1931 provided no additional changes are necessary.

Current production in this country by pools is found on page 209

In Kettleman Hills production reached the 23,000 barrel mark the past week and occasioned considerable anxiety among conservationists. Leaders in the proration movement will attempt to bring the field's daily yield down to 15,000 barrels.

At Elwood the average output exceeded 41,000 barrels during the past seven days. This is 6000 barrels in excess of a new allowable although it is approximately 90,000 barrels under the pool's actual potential.

Texas, New Mexico, Louisiana

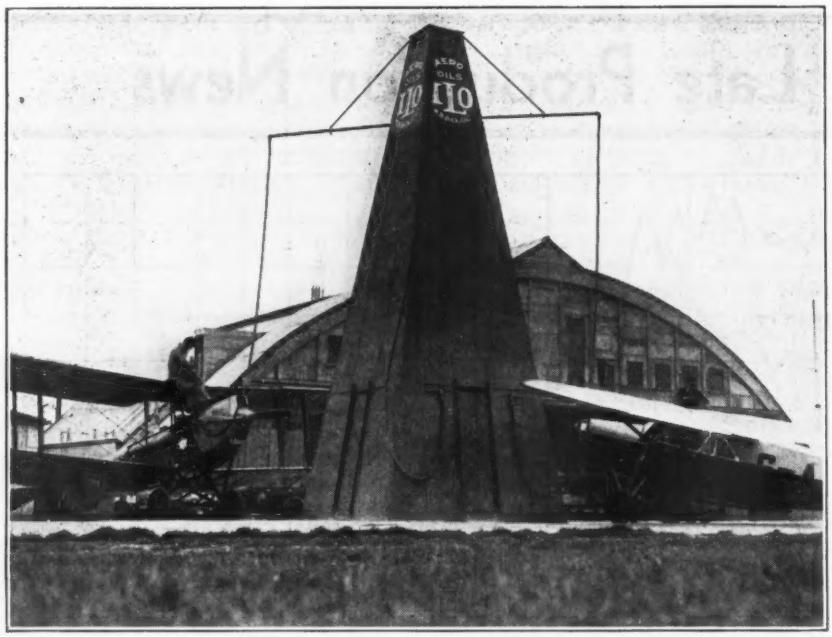
GETTY OIL CO.'S No. 1 State, 19-21S-36E, Eunice area of Lea county, New Mexico, is the currently most watched well in the Permian salt basin geological province. At 3879 feet, it flowed 20 barrels of clean oil in five minutes and is now drilling ahead. The Eunice area is southwest of the Hobbs district, which continues prorated at approximately 34,000 barrels daily compared with potentials aggregating 540,000 barrels.

In northern Ector county, West Texas, Southern Crude Oil Purchasing Co.'s No. 1 J. M. Cowden, discovery well of a new field, is flowing approximately 260 barrels daily.

Louisiana and Arkansas operations were of local importance only throughout the week.

Rocky Mountains

OHIO OIL CO.'S No. 1 Easton, on the Garland structure in northern Wyoming, bottomed at 4221 feet, has been in a sand for the last 100 feet showing heavy oil and gas saturation. It is continuing drilling with the hole full of heavy mud to control the gas. The company has just completed a 1000-barrel well on the Byron structure, just 2½ miles west of the Garland well. It is now believed that the two structures may be connected. Both wells are producing from the Tensleep formation. In Montana, Dry Creek structure, southern part of the state, company has what is believed to be a 1500-barrel well in the Frontier, the oil testing 52 gravity.



A new type of filling station just erected at Heston Airport, London. It is in the shape of a pyramid and can fuel three airplanes at a time

Ohio Proration Board Organized at Logan

LOGAN, Ohio, Sept. 17.—A permanent conservation board for southeastern Ohio oil fields was formed at Logan on Sept. 16. A meeting of a large number of independent and major producers was held in offices of the Gordon Oil Co.

Canvass of the situation showed that a cut of 24 per cent had been made in production of Pennsylvania grade crude in Ohio even before complete organization for proration. Additional curtailment is planned as soon as various committees can get organized and at work.

Sun Color Combination Rights Upheld

CLEVELAND, Sept. 22.—A second decision upholding the exclusive rights of the Sun Oil Co. to the color combinations it uses on its pumps and stations has been handed down by a New Jersey court. Last spring a New York court took similar action in restraining a dealer in that state from using color combinations on his gasoline pumps which tended to make the public believe Sun products were being dispensed.

In the New Jersey case Hellmund Oils Inc., signed a consent decree restraining it from using color combinations similar to those of the Sun Oil Co. or names similar to those applied by the Sun to its products such as "Sunray, Sunray gasoline, Sunray True Blue, True Blue or Twins of Power."

The defendant was not prohibited from selling blue gasoline.

CORRECTION

On Page 26 of the Sept. 17 issue of NATIONAL PETROLEUM NEWS in an article regarding F. H. Bedford, Jr., president of the Atlas Supply Co., it was incorrectly stated that his father, F. H. Bedford, Sr., died some two years ago.

Mr. Bedford, Sr., retired from active service with the Standard Oil Co. of New Jersey, early in 1927 after a service of 49½ years in the oil industry. He now is 76 years of age but leads an active life. He is an ardent golfer and sportsman. He comes in once each week to the company offices from his home at Greens Farms, Conn.

Gasoline Plant for Argus In Southwest Kansas

TULSA, Sept. 20—A new gasoline plant for the gas producing area of southwestern Kansas has been announced by the Argus Production Co. The plant is to be located a few miles north of Hugoton, in Stevens county.

Gas in this district is said to yield about 0.21 gallons per 1000 cubic feet. An active drilling campaign, carried on this summer, has made available an open flow supply estimated as close to 500,000,000 cubic feet. Residue gas from the plant will be turned into the gas line under construction out of the area into Iowa by the Moody-Seagraves, United Light and Power, Electric Bond & Share and allied interests.

May Cut Texas Output To 750,000 Bbls.

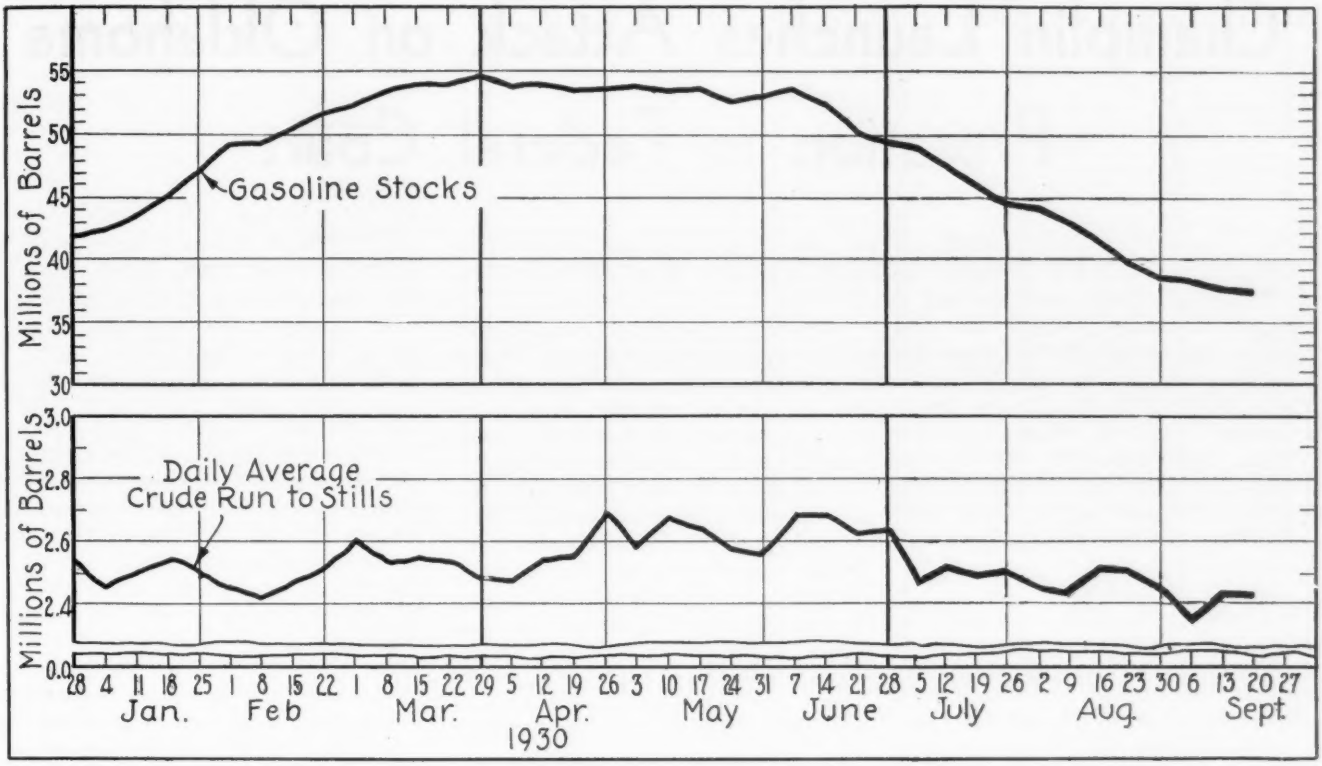
HOUSTON, Sept. 20.—Hope that Texas production can be whittled to 750,000 barrels daily in the next few weeks is expressed by Robert R. Penn of Dallas, president of Penn Oil Co., and active chairman of the petroleum industry's curtailment committee cooperating in statewide prorating.

Discussing the situation with the writer at Houston, Mr. Penn predicted continued sharp production cuts from last week's daily average of 789,650 barrels, state total.

An important reduction in the Panhandle district from last week's 85,050 barrels daily became apparent Sept. 16, when a 70,000 barrels prorating yield level became effective.

Refugio production, in the Corpus Christi district of the Gulf Coastal region, is expected to decline shortly to 25,000 barrels daily from last week's 29,500 barrels; West Texas, the general Ranger territory, the Wichita Falls district and southwest Texas also are expected to drop further, although all except the Gulf Coastal territory are now within their prorating allowances.

U. S. Crude Runs and Gasoline Stocks as Reported Weekly by A. P. I.



U. S. Gasoline Stocks Cut 572,000 Barrels

NEW YORK, Sept. 23
By Telegraph

STOCKS of gasoline at U. S. refineries were reduced 572,000 barrels in the third week of September according to reports gathered by the American Petroleum Institute. Stocks on hand Sept. 20 totaled 37,-260,000 barrels.

In the first three weeks of the month gasoline stocks at reporting refineries have been reduced 1,555,000 barrels. Total stocks on Aug. 30 were 38,-815,000 barrels.

The reduction in stocks during the past week was made with only a minor reduction in crude runs to stills indicating that gasoline shipments have been maintained at about the same level. Crude runs for the week averaged 2,440,900 barrels per day, a cut of 5400 barrels daily average. Refiners utilized 69.2 per cent of their still capacity during the week.

Nearly half of the reduction in gasoline stocks was made in California. Refiners there reduced their storage 238,000 barrels. Louisiana Gulf Coast refiners cut their stocks 167,000 barrels. Increases in stocks were reported by East Coast refiners in spite of a substantial cut in runs to stills and by Inland Texas plants.

Fuel oil stocks were reduced a half million barrels.

Current Refinery Operations

Districts	Per Cent Capacity Reporting	Daily Average Crude to Stills (Barrels) Week Ended		Per Cent of Reporting Capacity Operated Week Ended		Stocks (Thousands of Barrels)			
		Sept. 20	Sept. 13	Sept. 20	Sept. 13	Gasoline Sept. 20	Gasoline Sept. 13	Gas & Fuel Oil Sept. 20	Gas & Fuel Oil Sept. 13
East Coast	100.0	456,700	473,300	75.0	77.8	5,492	5,428	11,341	11,192
Appalachian	91.8	93,300	84,100	79.3	71.5	1,091	1,140	1,125	1,105
Ind., Ill., Ky.	99.6	303,600	299,700	79.7	78.7	5,542	5,635	4,443	4,460
Okla., Kans., Mo.	89.3	265,300	269,600	64.3	65.3	2,524	2,553	4,881	4,828
Texas	90.4	579,600	570,600	81.3	80.1	5,695	5,674	10,719	10,662
La., Ark.	96.8	158,400	155,400	60.5	59.3	1,117	1,308	2,094	2,006
Rocky Mountain	93.6	52,300	55,900	37.5	40.1	1,832	1,889	1,187	1,203
California	99.3	531,700	537,700	59.6	60.3	13,967	14,205	104,586	105,419
Total	95.6	2,440,900	2,446,300	69.2	69.4	37,260	37,832	140,376	140,875
Texas (Gulf Coast)	100.0	440,700	439,000	83.7	83.4	4,498	4,474	7,867	7,866
La. (Gulf Coast)	100.0	108,300	108,400	73.4	73.5	836	1,003	1,377	1,274

Champlin Launches Attack on Oklahoma Proration in Federal Court

TULSA, Sept. 20

OKLAHOMA'S conservation laws are getting a thorough test in the courts at last. Following the attack made by the C. C. Julian Oil & Royalties Co. in the state supreme court, decision on which has not yet been announced, the Champlin Refining Co. the past week went into the federal district court in Oklahoma City.

In the Julian case the assertion was made that the laws under which the state corporation commission issues proration orders violate the state constitution. The Champlin bill of complaint asserts that the federal constitution is violated. Thus a double-barreled test is provided.

Request was made that the court issue a temporary injunction to restrain the state from enforcing its orders against the Champlin, prior to the hearing. This was not done. Federal Judge Vaught set the case for hearing on Sept. 29. As constitutional question is involved, three judges will hear the arguments, one of whom must be a judge of the Circuit Court of Appeals or of the Supreme Court of the United States.

Champlin Refining Co., Enid, Okla., operates a refinery at that point and is engaged in all branches of the oil business. It has completed two wells in the Oklahoma City field. Nine wells in the general Seminole territory, in six of which it has half interest, are mentioned in the complaint as being subjected to proration. Three are in the Little River pool and the six in which it owns half interest are in the Konawa pool.

The company asserts that it has a refinery of 17,000 barrels daily capacity, 735 tank cars, 470 miles of pipeline, 263 retail filling stations and 256 wholesale stations in Oklahoma, Kansas, Texas, Iowa, Colorado and Illinois. It operates 45 producing leases and has about 400 undeveloped leases in Oklahoma, Kansas, New Mexico and Texas.

Proration orders issued June 30, July 24 and August 30 are attacked. The petition, which names as defendant the state corporation commission, says that the commission has designated Otto B. Bradford as umpire for the Oklahoma City field and Ray M. Collins for all other areas under proration.

It names agents of the Indian Territory Illuminating Oil Co., Prairie Oil & Gas Co., Wirt Franklin, Sinclair Oil & Gas Co., Shell Petroleum Corp., Carter Oil Co., Barnsdall Refineries, Inc., Gypsy Oil Co. and Magnolia Petroleum Co. as having been designated by the commission as its agents.

The suit arises under Sec. 10, Article I of the constitution of the United States, which asserts that no state may pass a law impairing of the obligation of contracts and Sec. 14, Article 14, the Fourteenth amendment which is the "due process" clause.

"Complainant states that said statute and the sections thereof of the state of Oklahoma above quoted and set out . . . constitute a law impairing the obligation of contracts, and especially the contracts of this complainant with the fee owners of said described land covered by said leases, and the royalty owners owning royalty interests in the oil and gas rights therein, and abridges the privileges and immunities of this complainant as a citizen of the United States, and deprives complainant of its property without due process of law and denies to it the equal protection of the laws . . ." says the bill of complaint.

In its second cause of action the Champlin says that the orders of which it complains violate the purposes of the state conservation laws and that they are not really the orders of the corporation commission but were drawn by the agents and employes of companies which are competitors of Champlin. It names again the companies listed in a preceding paragraph.

The orders, Champlin says, are not "based upon any finds or evidence properly submitted to the corporation commission, but are in effect a subterfuge whereby the said oil companies above named, by using the instrumentality of said . . . corporation commission, do and are in effect fixing prices of petroleum."

It asserts that the purpose of the state law is the prevention of waste and that Champlin's wells are equipped in the most modern manner and that there will be no waste in its operations. On the contrary, says the complaint, if the orders are enforced, water will enter the oil and gas sands in its wells because of the restrictions placed on them, and will cause actual waste.

It charges the companies named and their allies with having imported "vast quantities" of oil from Venezuela and elsewhere, producing and refining at much lower cost than is possible in the United States and that they are being abetted in this by the state corporation commission.

"Plaintiff further alleges that, if the natural economic laws of supply and demand are allowed to operate, the price of crude oil will come to such a level as to permit the independent refineries of this state to operate, whereas if the major companies are allowed to perpetrate the above described price-fixing program under the pretense of law, this plaintiff and many other independent refineries of this state will be forced to shut down, thousands of citizens in this state will be forced out of employment and millions of dollars of the invested capital of the citizens of this state will be vastly impaired," the complaint asserts.

A contention made by Champlin is that it will have the facilities for handling its own production without waste. It is completing an 8-inch pipeline into the Oklahoma City field which can transport about 18,000 barrels per day, more than its two wells will produce over a sustained period.

Opposing this, the state is expected to assert, as it did in the Julian case, that there are common rights in a pool and that Champlin would be able to produce, not only its own oil, but that of others who lack pipeline outlet.

Meantime, the proration committee of the Mid-Continent Oil & Gas Association continued its investigations into the probable market demand for Oklahoma crude oil for the last quarter of this year. Replies revealed a non-uniform condition among purchasers, including refineries located within the state.

Some—a very few—indicated that they would require a little more oil than they had used during the third quarter; many nominated a lesser amount. It will all add up to about the same figure fixed in the state order governing the third quarter, 550,000 barrels daily.

One of the problems confronting prorationists is that of Oklahoma City. Restricted to a theoretical 5.56 per cent of the potential from wells now allowed to produce, operators in the field are asking for 160,000 barrels daily outlet, which would be about 8 per cent of rated potential. How to grant this without swelling the total for the state or restricting areas now under proration is a question seemingly without answer.

The total output of non-prorated, small well pools in the state is around 250,000 barrels daily. There is some discussion, not crystallized into formal proposal, that there be a transfer of part of their outlet to Oklahoma City.

C. C. Julian, promoter, figured in the maze of court proceedings again the past week. A well he was drilling within the city limits was shut down at 6000 feet by the city obtaining a restraining order from state district court. He had never been given a permit to drill the well. The supreme court of the state granted authority, under $50,000 supersedeas bond, to Julian to complete the well.

With so much going on, the corporation commission announced another delay in the hearing on violations of the proration order. It cited 61 companies several weeks ago for having produced more than their allotted amounts. The case was postponed to Sept. 23. No decision having been announced by the supreme court in the Julian case, the commission postponed its hearing again, setting Oct. 6 as the new date.

Sinclair to Build New Pipeline To Oklahoma-Kansas Plants

By Telegraph

NEW YORK, Sept. 22—The new crude oil line to be constructed by the Sinclair interests from Oklahoma City to Coffeyville, Kan., will be laid by way of Sand Springs, Okla.

At Sand Springs the line will deliver Oklahoma City crude to the refinery which the company recently acquired from the Pierce Petroleum Corp. This plant is an 8000-barrel complete refinery.

E. W. Sinclair, president of Sinclair Consolidated Oil Corp., stated today that the company plans the line only to provide crude for the two plants and not as the beginning of a new system to the north.

TULSA, Sept. 20

A SURPRISE move of the Sinclair interests has set the rumor factory operating full blast. People are running about asking questions to which nobody can supply an answer.

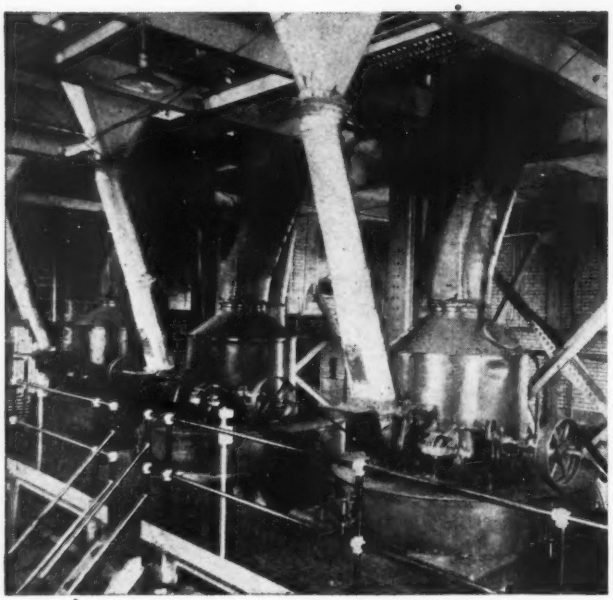
Having formally disposed, at stockholders meeting Sept. 17, of its half interest in the Sinclair Pipe Line Co. to the Standard Oil Co. of Indiana, the Sinclair company is surveying the route of a 12-inch pipeline from Oklahoma City to Tyro, Kans., which is about six miles east of Caney and 12 miles west of Coffeyville, where Sinclair has a refinery. Pipe has been ordered from the Youngstown Sheet & Tube Co. in the amount of 25,000 tons and deliveries will start immediately.

Immediately the news became public—although it has not been announced by the Sinclair interests — there were some who hailed it as evidence that the long drawn out merger negotiations between the Sinclair and the two Prairie companies had failed and that Sinclair was setting about to construct its pipeline system to its refineries. This interpretation gained such momentum that W. S. Fitzpatrick, chairman of the board of the Prairie Oil & Gas Co., was asked to comment. He telegraphed from New York to a Tulsa man that the report that negotiations were off came as a complete surprise to him. Which reply left things exactly as they were before.

A more feasible explanation of the reason for the line, as some oil men see it, is that it is designed to deliver Oklahoma City crude oil in an unmixed state to the Coffeyville refinery. This plant has present rated capacity of 5500 barrels, complete, and 10,000 barrels cracking. Reports in trade circles are that the plant is to be considerably enlarged.

Oklahoma City crude is highly desirable for making lubricants. The excess oil over what the Coffeyville plant would require could be turned into the Prairie Pipe Line Co. system at Caney, Kans., a station on the main trunk line going north and east.

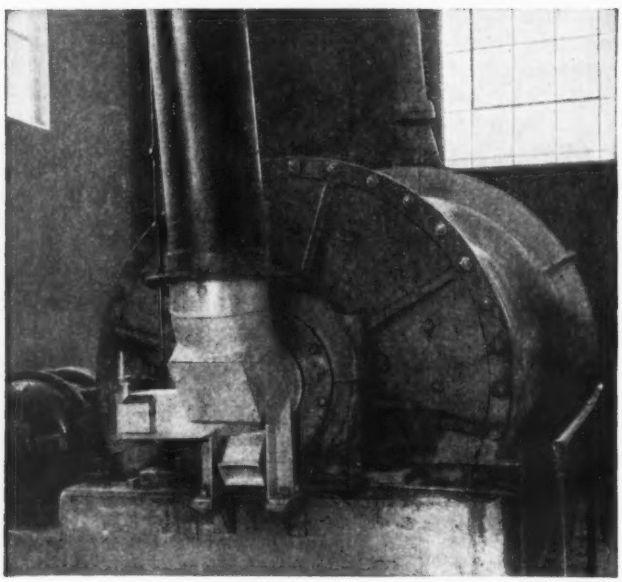
Thus, such construction would appear to fit into the merger plan, rather than indicating failure to complete the deal. Prairie Pipe Line has needed more capacity from its station near Shawnee, Okla., to the north, especially when fields of the Seminole district are booming. It is at this station that oil is received both from the Seminole district to the east and the Oklahoma City field to the west.



RAYMOND MILLS *to meet every grinding demand*

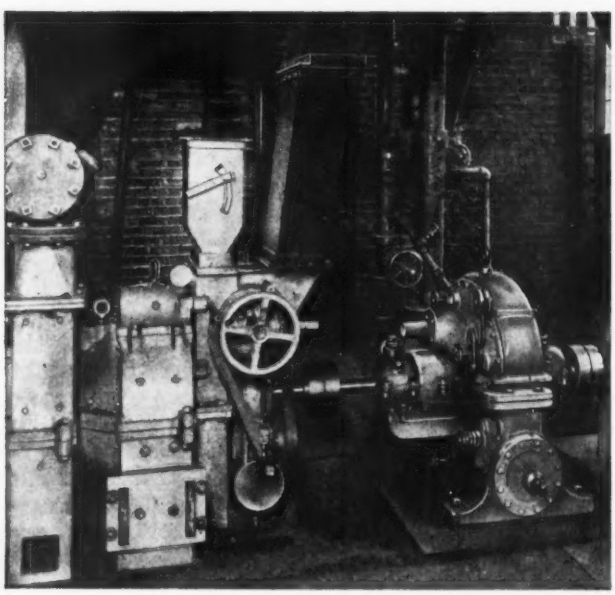
RAYMOND ROLLER MILLS

In sizes from one to forty tons per hour.



RAYMOND BALL MILLS

In sizes from one to twenty-five tons per hour.



RAYMOND IMPACT MILLS

In sizes from 500 to 15,000 pounds of coal per hour.

COMBUSTION ENGINEERING CORPORATION

200 MADISON AVENUE, NEW YORK, N. Y.

Boilers **Pulverized Fuel Equipment** **Stokers**
Water-Cooled Furnaces **Air-Preheaters**

Van Field Second Only to Yates in Conservative Exploitation

By Paul Wagner

N. P. N. STAFF WRITER

FORT WORTH, Sept. 18

AN OIL field that is second only to the Yates area in its present potential importance has reached a stage of major development in Texas. It is the Van district of eastern Van Zandt county, in the Woodbine sand zone of East Texas.

The Van and Yates areas have one outstanding credit in common. Though unlike in other respects, they represent the two districts of Texas where developments of market-breaking proportions have been conservatively exploited for the ultimate best interest of operators and for the present good of the entire industry.

Open flow potential production of the 105 wells in the Van field, Sept. 15, was estimated totaling in excess of 1,000,000 barrels daily from the 2900-foot Woodbine sand horizon. Under unified development, plus a later prorating order issued by the Railroad Commission of Texas, exploitation is curtailed to 27,500 barrels daily; 25,000 barrels in the unit area and 2500 barrels in a non-unified northeast extension.

Yates field, producing from 950-1675 feet in the Permian salt basin of West Texas, continues exploited at 100,000 barrels daily, notwithstanding its 388 wells on 189 prorating units of 100 acres each are recognized for open flow potentialities of 5,499,852 barrels daily, based on one-hour gauges.

Because of the long-recognized impracticability or desirability of ever exploiting the natural-water-drive Yates field at open flow maximums, the prorating committee discounts the district's potential 50 per cent by multiplying hourly gauge figures by 12 instead of 24, thereby getting a daily rating of 2,749,926 barrels.

Originally, Yates field was prorated at 30,000 barrels daily, about three years ago; its maximum exploitation, earlier this year, was 130,000 barrels daily.

Over average monthly or semimonthly periods, Van field has never been exploited at more than 30,000 barrels daily. It has been under development approximately one year since Pure Oil Co. drilled the discovery well in October, 1929. Early completions tested 7000 to 15,000 barrels, initial productions, before immediately choking down to nominal quantities for exploitation.

As subsequent wells were completed initial tests gave no fair idea of well sizes under open flow, because of their bringing—in through small chokers, usually 5/64-inch to 12/64-inch. Late completions, thus choked, show initial productions varying from 111 to 300 barrels.

Because of the necessity for protecting against leasehold requirements, Pure Oil Co. set up a program of 125 wells in 15 months after making the field discovery in October, 1929.

Co-operating with The Texas, Shell, Sun and Humble Companies, which owned acreage inside the inferred field limits, the Pure began a campaign of unified development worked out to eliminate necessity for immediate drilling of perhaps 1000 to 1500 locations since proved for production.

By the end of the 15-months period the 125 wells originally proposed will have been exceeded, partly because of necessity for offsetting a few operations by others than joint-account participants on excess survey strips of two to five acres.

Excess survey strips have been the bane of Van unified development, once or twice threatening to disrupt the plan to the point of failure. Pure

Tanks and wells in Van townsite area, one of the spots where protective drilling required unusual offsetting practice

Oil Co., which participates 82 per cent plus in the unit plan, because of its extensive acreage, brought out several owners of excess strips and is reported negotiating with others at total costs mounting to several hundred thousands of dollars.

Perhaps 30 to 40 new wells will be required to offset a half dozen prospective completions by Independents on excess survey strips. Eight or 10 will be forced by completion of the No. 1 Sanger Brothers of George Anderson, of Fort Worth, which on 11/64-inch choker tested 1655 barrels in 12 hours.

The Sanger well is on the John Walling survey, between the unit area and a four-mile northeast extension so far developed by Humble Oil & Refining Co., and The Texas Co., under non-unit operations.

In the northeast extension, the Humble's Ruth Starr Blake well, estimated good for 20,000 barrels, initial production, when completed at the end of August, is exploited at 655 barrels daily. Its No. 1 Carroll, another potentially large well, and The Texas Co.'s No. 1 Carter, are exploited at 475 barrels each daily.

The 100 wells operated under joint account were averaging 252.4 barrels each in the week ended Sept. 12. Only slight variations from such a per well per day average are shown from week to week. Under the unit plan, percentage adjustments protect joint-account owners in their respective recovery rights.

Like other areas of relatively curtailed development, Van field operations proceed without the hurly-burly attendant upon earlier Woodbine sand fields such as Mexia, Wortham or Powell. A transformation is apparent, of course, since the inland town of Van consisted mainly of a cross-roads store before oil was discovered.

Now natural gasoline plant is at point of completion on the Peters lease to handle gas production of the joint-account companies. The largest gas volume of any well in the field so far has been 500,000 cubic feet daily, but profitable operation is indicated by recovery tests showing three gallons to the 1000 cubic feet.

Wells are completed at average costs of $22,000 to the 2900-foot Woodbine sand. About 300 feet of 10-inch surface casing is set and a string of 7-inch, outside diameter, casing is carried to the Woodbine level. Perforated liner instead of screen is used in completing wells.

After coring the pay, wells are "washed in" and flowed through 2 1/2-inch tubing, under chokers varying from 5/64-inch to 12/64-inch, although first gauges are sometimes made with ½-inch chokers.

New California Proration Program Allows But 550,000 Barrels

LOS ANGELES, Sept. 19

CALIFORNIA operators, acting through the general committee on curtailment, the past week adopted a new state-wide oil proration program that will limit allowable production on the west coast to 550,000 barrels daily. The new plan is scheduled to continue in effect until Jan. 1, 1931, subject to any changes made by the committee.

Although this reduction from the previous allowable of 596,000 barrels had been contemplated for several weeks, minor complications prevented its indorsement by a majority of the operators. A few recalcitrant companies were reported to have refused to ratify a further cut in daily crude output under the then existing conditions of a high crude oil price structure and low retail gasoline prices.

The action late last week by Standard of California, of simultaneously reducing crude and advancing gasoline apparently reconciled these holdouts to the revised program.

Under the new proration schedule the fixed allotment for various fields within the state was established actually at 540,000 barrels per day. However, this figure did not include an unobtainable curtailment of 7000 barrels at Santa Fe Springs, an excess of 10,000 barrels at Kettleman Hills and the unprorated output of approximately 20,000 barrels at Playa del Rey.

Provided other areas within the state reduce their production to the allotted figures, California's total daily production would be reduced to approximately 577,000 barrels. By setting a goal of 550,000 barrels, the operator's committee hopes to reduce actual production at least 40,000 barrels under the state's daily yield of 609,000 barrels during the first half of September.

No definite allotment was given Playa del Rey because there is at present no recognized market or price quotation for the oil.

California Proration Schedule September 16-30, 1930

	Sept. 16-30 potential (bbls.)	Per cent cut	Fixed allotment (bbls.)
Belridge	3,620	53.10	1,700
Brea-Olinda	22,450	51.00	11,000
Capitan	1,025	98.05	20
Coalinga	34,100	73.61	9,000
Dominguez	15,220	37.58	9,500
East Coyote	3,595	55.49	1,600
Elk Hills	30,210	43.80	17,000
Elwood	121,580	71.25	35,000
Fruitvale	8,605	69.32	2,640
Huntington Beach	44,170	36.61	28,000
Inglewood	22,585	29.16	16,000
Kern Front	21,885	56.59	9,500
Kern River	12,000	77.50	2,700
Kettleman Hills	90,000	83.33	15,000
Lawndale	250	10.00	225
L. A. & Salt Lake	1,450	3.45	1,400
Long Beach	198,470	52.13	95,000
Lost Hills	6,500	95.00	325
Maricopa Flat	17,665	54.75	8,000
McKittrick	4,470	19.46	3,600
Midway-Sunset	90,820	44.90	50,000
Montebello	9,195	21.70	7,200
Mount Poso	23,925	62.40	9,000
Newport	30	.....	30
Playa del Rey	23,450	.....	.....
Potrero	2,510	.40	2,500
Richfield	15,200	40.79	9,000
Rincon	2,700	.....	2,700
Rosecrans	6,655	17.36	5,500
Round Mountain	11,825	66.20	4,000
Santa Fe Springs	184,710	51.27	90,000
Santa Maria	10,420	71.25	3,000
Seal Beach	35,425	49.19	18,000
Summerland	310	3.23	300
Torrance	11,825	15.43	10,000
Ventura Avenue	92,065	49.49	46,500
Ventura-Newhall	5,800	22.41	4,500
Watsonville	60	.....	60
West Coyote	11,175	23.94	8,500
Wheeler Ridge	600	.....	600
Whittier	1,450	3.45	1,400
Total	1,200,000	55.00	540,000

New Elwood and Kettleman Hills Wells Threaten California Proration

By Jack N. Westsmith

N. P. N. STAFF WRITER

LOS ANGELES, Sept. 19

ELWOOD again features Pacific Coast production news. A completion there the past week threatened to exceed in daily production even the most recent tideland gushers that in one instance yielded more than 14,000 barrels on the last day of an open flow test.

Vieing with this district for the spotlight, the north dome, Kettleman Hills, loomed as a major menace to proration plans on the west coast. Conservation leaders, handling that part of the state's curtailment program, met with committee members the past week in an effort to prevent the contemplated drilling activity on fee land and to reduce daily production from the north dome to at least 15,000 barrels per day.

Except for these two flush pools and with the possible exception of Playa del Rey, California operators appeared capable of reducing the state's output to the newly established figure of 550,000 barrels allowable. A few routine completions at Long Beach, Playa del Rey, Santa Fe Springs, and Round Mountain, averaged less than 500 barrels per day each and failed to offset the natural decline of producing wells.

In completing its tideland permit well 88-5 for an initial output of 9550 barrels of 37 gravity oil during a 24-hour gauge test, the Rio Grande-Barnsdall combination raised the actual potential production at Elwood above 130,000 barrels. Flowing through open hole with the bottom at 3457 feet, the latest completion built up a daily yield in excess of 14,000 barrels during the final 24 hours of the five-day open flow test.

Permit 88, also contains well No. 4 that was completed over a fortnight ago and which during the flow test also topped 14,000 barrels a day. Bankline Oil Co.'s permit 89, to the south, offsetting the combine's tideland holdings failed to show as substantial a production record as its neighbor. The 89-4, recently completed for 2500 barrels, increased its flow to 4000 barrels over the test period.

By beaning down new completions to their minimum output immediately following this period of unrestrained flow, operators in the Elwood pool provide room for additional wells to be completed without upsetting the proration program. The unusually large completions registered in this field during the past six weeks has made the burden of curtailment extremely heavy.

For the latter half of September producing companies must sustain a cut of over 71 per cent in order to keep the field's allotted output below the desired goal of 35,000 barrels. Fewer completions scheduled for the remainder of 1930 will permit some of the shut-in production to be opened up.

A far less satisfactory condition exists at Kettleman Hills in the northern San Joaquin Valley. Encouraged by results obtained in Superior Oil Co.'s outpost, Huffman No. 1, several companies are increasing their activities on the north dome.

Early in the week it was reported the Huffman was leaking gas and oil due to the extremely high gas pressure and rate of production. However, field reports later denied this report, although it was indicated there was considerable vibration that might eventually loosen the fittings. Engineers were of the opinion that it would prove a hazardous undertaking to bean the project in at its present rate of flow. As the week closed the well was making nearly 10,500 barrels of 40 gravity oil and 80 million cubic feet of gas.

There is considerable horse play and buck passing among the operators with producing wells on fee land in this area. Almost invariably the curtailment committee seeking to reduce daily production from the area met with the answer: "Let the other fellow shut in first, I will follow."

Standard Oil Co. passed the Bentonite market in its offset to the Huffman No. 1 at about 6858 feet. It is located on Sec. 29,21-17, along the north dome axis to the south of the Huffman lease, and company engineers expect to pick up the top of the productive Temblor between 6900 and 7000 feet. This project will probably be the next completion in Kettleman Hills.

Superior is reported to be making preparations to start operations on Huffman No. 2 to comply with lease requirements. Lincoln Drilling Co. has bought in on the north dome. Its lease on the northwest quarter of Sec. 32,21-17 is an approximate half mile south and west from the Superior producer.

In the play immediately surrounding Sec. 35,21-17, which contains the three producers of Standard, Petroleum Securities and Associated, there has been a steady increase in protective drilling.

Continental Oil Co. on the adjoining Sec. 2,17-21, of government land, is drilling ahead on a special permit from Secretary Wilbur. This well will not be allowed to produce until termination of the Kettleman Hills Agreement, July 31, 1931. To protect themselves against drainage by the Continental well, Milham Exploration Co. and Pacific Western Oil Co. are drilling offset wells on Sec. 1,17-21.

CLEAR ACROSS *the* CONTINENT GENERAL MOTORS TRUCKS HELP "FEED" THE AIRBIRDS!

$1595
2-TON RANGE

Model T-30B . . . Straight Rating, 11,000 lbs., total gross weight including load . . . 3 chassis and 15 types . . . prices chassis only, f. o. b., Pontiac, Michigan

ABOVE you see a complete "one-stop" service station, mounted on a General Motors Truck, Model T-30 chassis with a 500 gallon gasoline tank, 100 gallon oil tank, and air tank.

It is provided by the Sidles Airways Corporation for "feeding" gas, oil, air and water to the ships at the Union Airport in Lincoln, Nebraska.

So completely equipped is this refueling unit that one man can perform the entire servicing.

Oil is served at the same temperature as that already in the motor, or motors, of the plane. Safety valves, fire extinguishers, air gauges, flood light, power take-off, and coupler for towing planes are some of the features of this super-service unit.

At scores of airports throughout the country you see many different models in the great General Motors Truck line engaged in work of this type—as standard trucks and as tractors.

Their unusual speed and power, remarkable *maneuverability*, and day-in-day-out *dependability* all combine to make these *modern* trucks particularly suitable for this *modern* work.

This great line is worth investigating—today!

GENERAL MOTORS TRUCKS

TIME PAYMENTS, on any General Motors Truck, are financed at lowest rates available anywhere, through our own Yellow Manufacturing Acceptance Corp.
GENERAL MOTORS TRUCK CO., Pontiac, Michigan (*Subsidiary of* Yellow Truck & Coach Mfg. Company) GENERAL MOTORS TRUCKS . . . YELLOW CABS . . . COACHES.
Factory Branches, Distributors, Dealers—in over 2000 principal cities and towns.

PRODUCT OF GENERAL MOTORS

Harper County Wildcat Gets Wet Gas; Big Well in Texas Panhandle

TULSA, Sept. 20

THE feature of the week in the Mid-Continent area was provided by Texas Panhandle, where a well estimated as good for between 3000 and 10,000 barrels, with 40 million cubic feet of gas was drilled in about four miles southwest of Pampa, Gray county. Nearest production is a well good for about 25 barrels, three-quarters of a mile away.

In Oklahoma, signs of life in the deep wildcat in Harper county, in the northwest corner of the state, and further developments in the test north of Oklahoma City were the features of an otherwise routine week. Kansas developments were unimportant.

The Panhandle well is the No. 1 Sullivan, of Graham et al, in Sec. 136, Blk. 3, I. & G. N. Survey. The well is not completed, but at last reports was flowing wild through the 8-inch pipe. It blew in when the 8-inch was being run to the granite wash pay, which was topped at 2990 feet. It was out of control for several days, its production being variously estimated at from 3000 to 10,000 barrels per day. Forty million cubic feet of gas per day is estimated as accompanying the oil. The nearest production is a light well drilled by the Magnolia Petroleum Co. in Sec. 152, of the same block. The Magnolia well is good for a bare 25 barrels.

The area's second best completion of the week was also in Gray county. The Mid-West Exploration Co. No. 2A Bowers, was completed for 2550 barrels in the granite wash at 3179 feet. The well is in the Bowers-Finley pool. Daily average production of the Texas Panhandle from 1893 wells averaged 82,-369 barrels, a decline of 2728 barrels per day from the week before.

Wildcat watchers in Oklahoma divided their time during the week between the deep test drilled by the Sinclair Oil & Gas Co. in Harper county, and the Mid-Kansas Oil & Gas Co. well north of Oklahoma City.

The Sinclair well is located in the SW SW of 14-26N-24W. It is the deepest ever drilled in the state having been carried to a total depth of 8587 feet before being abandoned in the Mississippi lime, of which nearly 1600 feet had been drilled.

When it was decided there was nothing further to be gained by deeper drilling, the hole was plugged back, and tests were decided on for showings passed up when the hole was first being put down. The hole was plugged back to 6750. A show logged at 6715-20 was shot with no results. Shooting was again tried at 5350-5400, resulting in 15 million cubic feet of wet, blue gas.

It is not known definitely whether the gas is coming from the point at which the well was last shot, or back of the pipe from the depth where the first shot was set. The general belief is that the gas is coming from the Tonkawa, encountered at 5385-5420. The well has made 65 barrels of gasoline in 12 hours from the trap. It is thought that the gasoline recovery might be as high as 250 barrels per day.

Acreage surrounding the well is held in practically a solid block by Sinclair. It is understood that the well is to be shut in, and no further drilling undertaken for the time being.

The wildcat of last week, Mid-Kansas Oil & Gas Co. No. 1 Miesser, though still not a completion of major size, continued to justify its drilling. Given a 60 quart shot, the well increased its production to 750 barrels per day. It will be given another shot.

Seventy-four feet of pay has been drilled in the well, the sand being topped at 6697 and drilled to 6771. The action of the well has led many to believe that a Wilcox sand pool of possibly major importance may have been discovered. Such a pool, if it is there in the area southwest of Edmond, will not be developed just yet, it being understood that owners of offset acreage were willing not to start any wells if the new one were shut in. The operators owning the well were willing to shut it in if no offsets were started, so the agreement was reached.

Another production test of the Amerada Petroleum Corp. discovery in Sec. 29-9-6, Seminole county, was made during the week. The well yielded 3095 barrels on open flow. Other developments of the week in the state were of a routine nature.

Kansas

Kansas had little new to offer in the way of development news. The Rice county test recently reported on as having a showing failed to develop into much of a producer. The operators, Hershey et al, swabbed for an hour and a half, the well yielding 25 barrels. The fluid level was reduced from 2200 to 1200 feet. When the swab was stopped, the hole filled back up again to 1800 feet. A little water is coming with the oil. The well is located in the SW of 10-19S-10W, Rice county. The pay is the siliceous lime, at 3335 to 3340.

The largest well of the week was in the McPherson county pool, where Palmer and Lario got one good for 3100 barrels in 24 hours. The pay is the chat topped at 2935 feet. The oil is 37 degrees A.P.I. gravity at 60 F. It is cutting about two per cent. The well is located in the NW SW NW of 7-20S-1W.

The same operators completed another well in the field a few locations to the north, but it was nothing like as good a producer. It topped the chat at 2920-65, making but 223 barrels in 24 hours. Fourteen per cent of the flow was water. The latter well is located in the SW NW SW of Sec. 6-20S-1W.

What are you planning next?

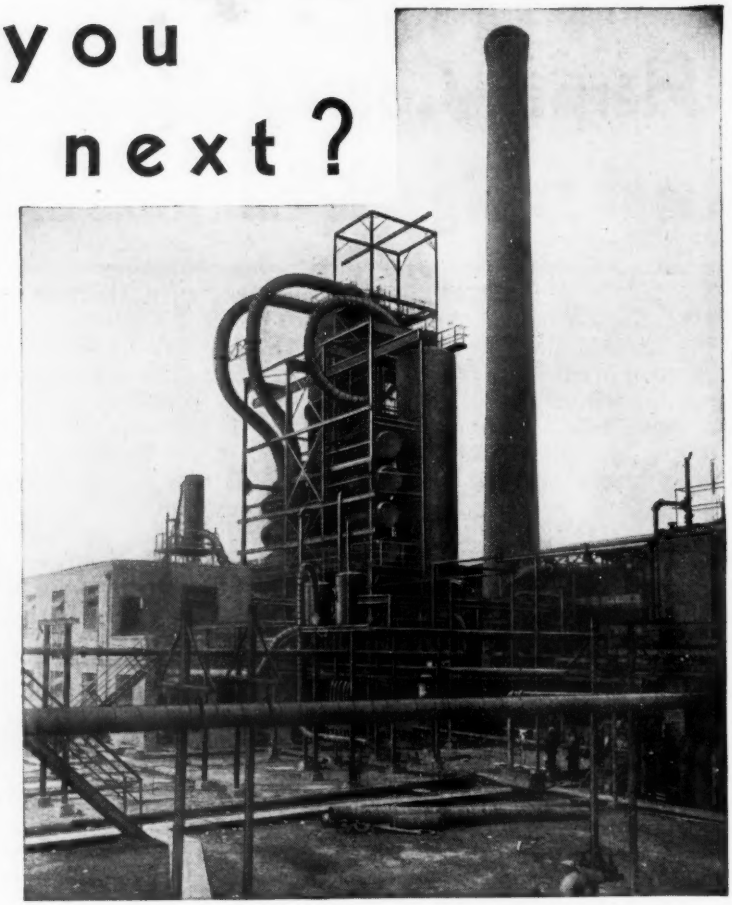
Submit your hardest specification . . .

You will find
that we interpret it out of a background of experience with identical or similar problems.

You will find
that we have the most modern facilities to fabricate piping for high pressures and high temperatures.

You will find
that our engineers can serve you with practical ways and means to attain unusual technical objectives.

You will find
that we think also in terms of speed, low installation expense, low maintenance, and longevity.



Fractionating Oil Refinery—High and low pressure steam and hot oil and water Piping by Grinnell.

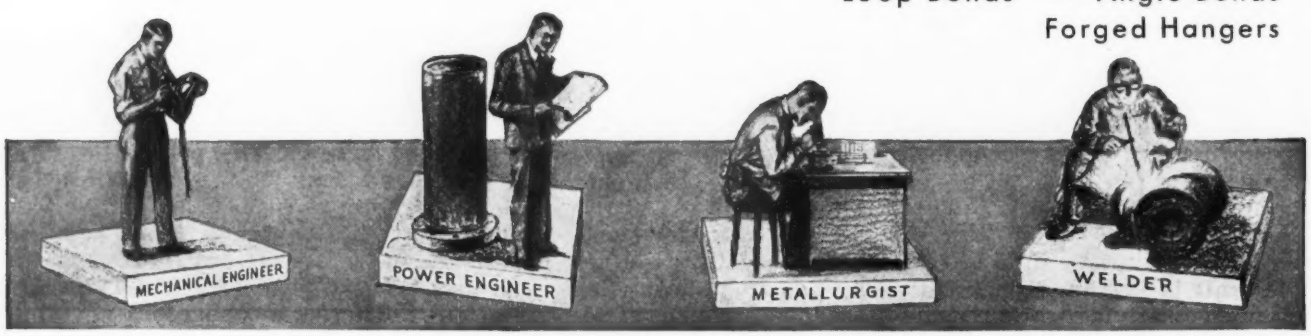
Hangers—Special Grinnell Hangers, Supports and Clamps.

Engineers: Foster Wheeler Corpn.
New York, N. Y.

TRIPLE XXX PRODUCTS

High pressure, high temperature oil piping—piping for complete refinery, pumping or compressor station or simply a bend, welded header or coil.

Lap Joints — Welded Headers
Loop Bends — Angle Bends
Forged Hangers



GRINNELL COMPANY

Executive Offices: Providence, R. I.
Branches in all Principal Cities

FABRICATING AND MANUFACTURING PLANTS

Atlanta, Ga.
Auburn, R. I.
Columbia, Pa.
Providence, R. I.
Warren, Ohio

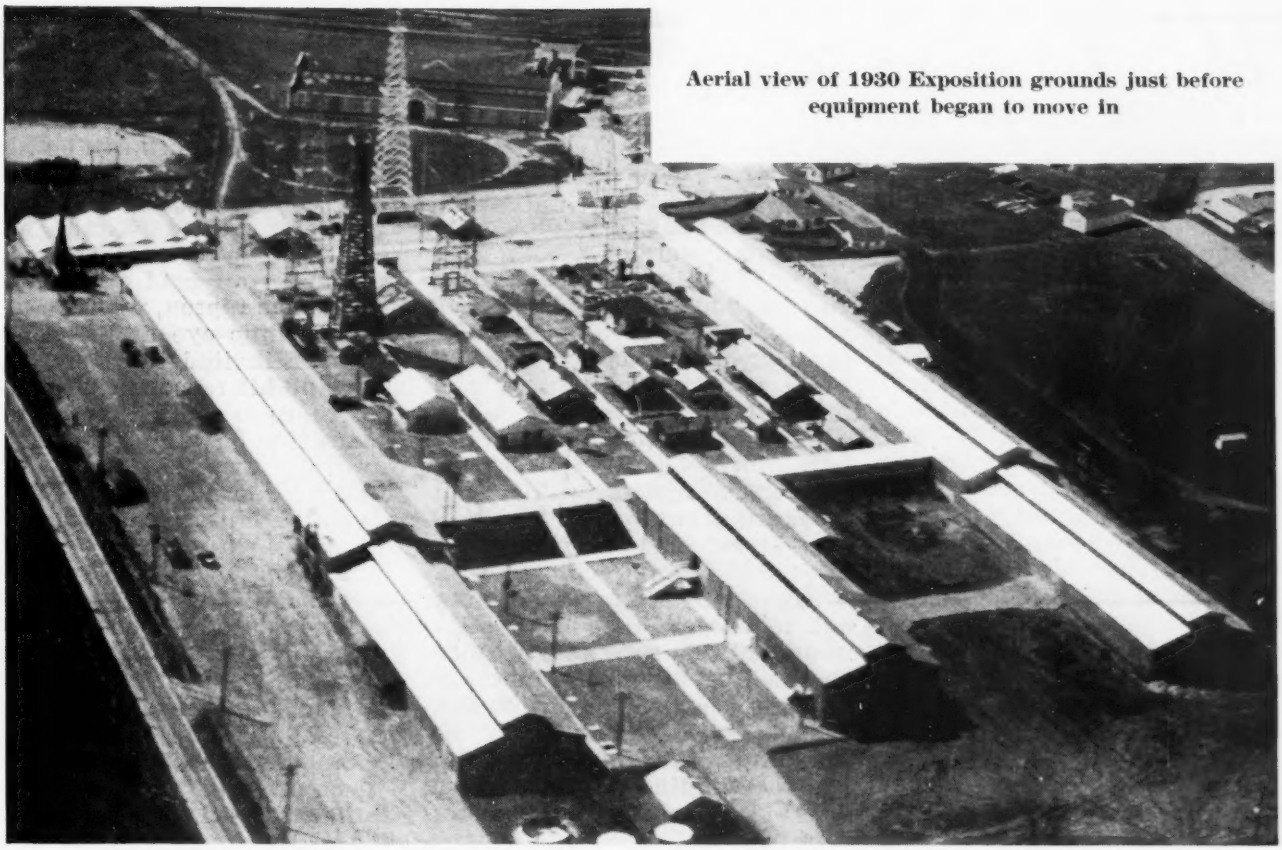
BRANCH PLANTS AND WAREHOUSES

Charlotte, N. C.
Chicago, Ill.
Cleveland, Ohio
Kearny, N. J.
Philadelphia, Pa.
St. Louis, Mo.
Oakland, Calif.
Minneapolis, Minn.
Los Angeles, Calif
San Francisco, Calif.
Seattle, Wash.
Atlanta, Ga.
Providence, R. I.
Warren, O.
St. Paul, Minn.

BRANCH OFFICES

Tulsa, Oklahoma
Dallas, Texas
St. Louis, Mo.
Charlotte, N. C.
Atlanta, Ga.
Chicago, Ill.
St. Paul, Minn.
Cleveland, Ohio
Minneapolis, Minn.
New York, N. Y.
Philadelphia, Pa.
Pittsburgh, Pa.
Providence, R. I.
Warren, Ohio
Los Angeles
San Francisco

Offices also in all other principal cities of the United States and Canada



Aerial view of 1930 Exposition grounds just before equipment began to move in

600 Exhibitors Ready to Welcome Oil Men to 1930 Petroleum Show

TULSA, Sept. 24

FOR this, the seventh International Petroleum Exposition and Congress, the one week, Oct. 4 to 11, is a crowded one. Tulsa is the meeting ground of exhibitors and their customers and at the same time is the forum where oil men will gather in formal session to contemplate the many problems of their industry.

There is a parallel between this year's Exposition and the first one, held in 1923. In that year there was a serious depression in the oil industry, just as there is this year. Yet, the first show was so well patronized that larger quarters had to be found for the next one. And this year finds every foot of exhibit space under contract. In spite of the two large buildings that have been erected since last year, a number of late comers were unable to get any space.

Not alone is enthusiasm shown by exhibitors. A month before the opening date the committee in charge of hotel arrangements reported that all rooms in the six large hotels had been reserved and many of the rooms in smaller hotels and apartment houses which had vacant suites. It appeared that the committee might have to request householders to accommodate some of the visitors. That has been done in some other years, although never at a time when Tulsa had as many first class hotels as it now has.

For the 1929 Exposition the railroads brought into Tulsa 125 extra, or overflow, Pullman cars. This year they have arranged for 175. These come from various concentration points in the United States.

From the exhibitors' standpoint the show will exceed that of last year. A total of 375 contracts for space were signed with the Exposition, about 75 more than in 1929. There will be more than 600 exhibitors. In many instances two or more share the space contracted for.

Preceding the opening of the Exposition is an important meeting of a technical group within the oil industry. On Thursday and Friday, Oct. 2 and 3, the petroleum division of the American Institute of Mining & Metallurgical Engineers will meet in the Mayo hotel. The program for this meeting is divided into two general subjects, ultimate recovery of oil and methods of increasing recovery considered as one subject and unit development as the other.

On these same days the American Petroleum Institute will hold three meetings. The general committee of the division of production will meet at 10 o'clock the morning of Oct. 2, with Chairman W. N. Davis presiding. That afternoon at 2 o'clock Chairman W. M. Irish will conduct a meeting of the

general committee of the division of refining.

At 10 o'clock Oct. 3 the general committee of the division of marketing will meet with Chairman Henry M. Dawes presiding. At 12:30 the directors of the A. P. I. will meet at luncheon. They have invited members of the general committee to meet with them. Directors and committeemen have been invited by Frank Phillips, president of the Phillips Petroleum Co., to visit his ranch near Bartlesville and to remain there for dinner.

With the preliminary meetings out of the way, the Exposition will be formally opened Saturday afternoon, Oct. 4. Preceding the opening ceremonies will be a parade. A feature of this will be 200 boys, mounted, who are coming from Baxter Springs, Kans., to give exhibitions of their horsemanship. This troop is sponsored by Tom Mix, moving picture star, who was an authentic cowpuncher before the pictures began paying big money to men who could ride and rope.

Patrick J. Hurley, secretary of war, will make the opening address. He formerly was a resident of Tulsa and was engaged in the oil business for several years. After the brief ceremony, the 1930 show will be declared open.

As has been the practice for several years, the management has arranged wholly a business show. There will be no entertainment features of an elaborate nature, no carnival companies. There will be a band concert each day, competitive events will be staged by safety teams entered by oil companies. That about covers the special events.

The petroleum division of the American Society of Mechanical Engineers will meet Oct. 6-8, while the Exposition is in progress. An elaborate program featuring the refining and transportation divisions of the industry has been arranged.

From the nature of the meetings that will be held, it is apparent that the engineering side of the oil business will be stressed. Another session, which will afford opportunity to bring up questions not touched upon in other formal programs, has been provided for Oct. 10 in the auditorium at the grounds. This is an open forum. George G. Oberfell, of the Phillips Petroleum Co., has accepted the chairmanship of this session. Anyone is free to ask a question on any phase of operating, whether producing, refining, transportation or marketing, and engineers will be present to lead the discussion.

The 1929 visitor will note several changes this year in the arrangements. Two large buildings have been added. One of these houses the refining and marketing exhibits. The latter branch of the industry has not heretofore been accorded its own space and the exhibits of marketing equipment are several times greater than they have been at any previous show.

Accommodations for getting out to the grounds have been improved. There is nearly twice as much parking space as there was last year. More paving has been laid by the city in the direction of the Exposition site and the running time of busses and autos carrying passengers for hire will be shorter.

The job of feeding the crowd that attends the Exposition is always a large one. In other years the cafe concession was let to downtown restaurant men and it was not always satisfactory. This year the Exposition itself will manage the restaurant.

The building used for the past two years has been remodeled and more space provided. The visitor will have his choice of cafeteria or waiter service. There are places for 350 persons at one time. The place is fly-proof and the prices are a little under those that prevail in restaurants downtown.

That, in the sketchiest possible manner, is the 1930 Exposition, whose gates are soon to open. The show is intensely businesslike. It is not a place of entertainment. It is tailored to fit the exhibitors, who have their products to display to the buyer, and the oilman who comes from many states to see in one or two day's time just what the manufacturer has produced that will fit the oil man's regular or special problems.

Various oil companies will, as usual, bring their field and refinery men to the Exposition. Foreign delegates, officially accredited by their governments in response to the invitation sent by President Hoover through the department of state will be present. Fifty-three nations were asked to participate and it is considered as certain that 20 or more will be represented.

A distinguished German manufacturer, Alfred Wirth, will be present and will display certain of his oil field equipment. Sir Thomas Lipton, who is much in the public eye at this time, has been invited to attend the show and his response indicated that there is more than a fair chance that he will attend. Lord Cowdray, large stockholder in the Amerada Petroleum Corp., is another international figure who may be a visitor.

Then there is an European party coming to the Exposition on a tour arranged by the American Railway Express. There will be about 100, all men engaged in the oil business. They sail from Southampton on the S. S. Olympic, Sept. 25. They will be present the entire week of the Exposition, after which they will visit the principal producing and refining centers of the southwest.

The annual golf tournament of the Exposition will open Oct. 6. Frank S. Gray, of the Prairie Oil & Gas Co., is chairman of the committee in charge. Prizes will be given for all flights and for medalists. Play will be over the difficult Tulsa Country Club course.

Qualifying play will be on Oct. 6 and the following day flights of 16 each will play the first round.

W. A. Schlueter, president of the Refinery Supply Co., heads the Scientific and Technical Committee.

The reception committee has as chairman R. C. Sharp, president of the Independent Oil & Gas Co. He is assisted by J. Monte Hayner, producer, who has charge of local transportation problems in co-operation with the Junior Chamber of Commerce, of Tulsa.

A. F. Winn, traffic manager for Skelly Oil Co., is chairman of the special trains committee.

Safety demonstrations and competitions have been planned by a large committee of which Don J. Wallace is chairman. Mr. Wallace is safety director of the Mid-Continent Oil & Gas Association.

«Expo» Visitors May See New Equipment At Work in Oklahoma City Field

By Lawrence E. Smith
N. P. N. STAFF WRITER

AFTER seeing the equipment on display at the International Petroleum Exposition, the visitor may see it in action in the Oklahoma City field.

There is little used in the drilling of wells, in natural gasoline plants and in pipeline work that is not in service in this, the greatest oil field in the Mid-Continent field today. The field is exceeded in potential production by only one, the Yates pool in Texas. It is by far the largest single pool, from the standpoint of present potential production, ever found in Oklahoma or Kansas. And it is also the deepest.

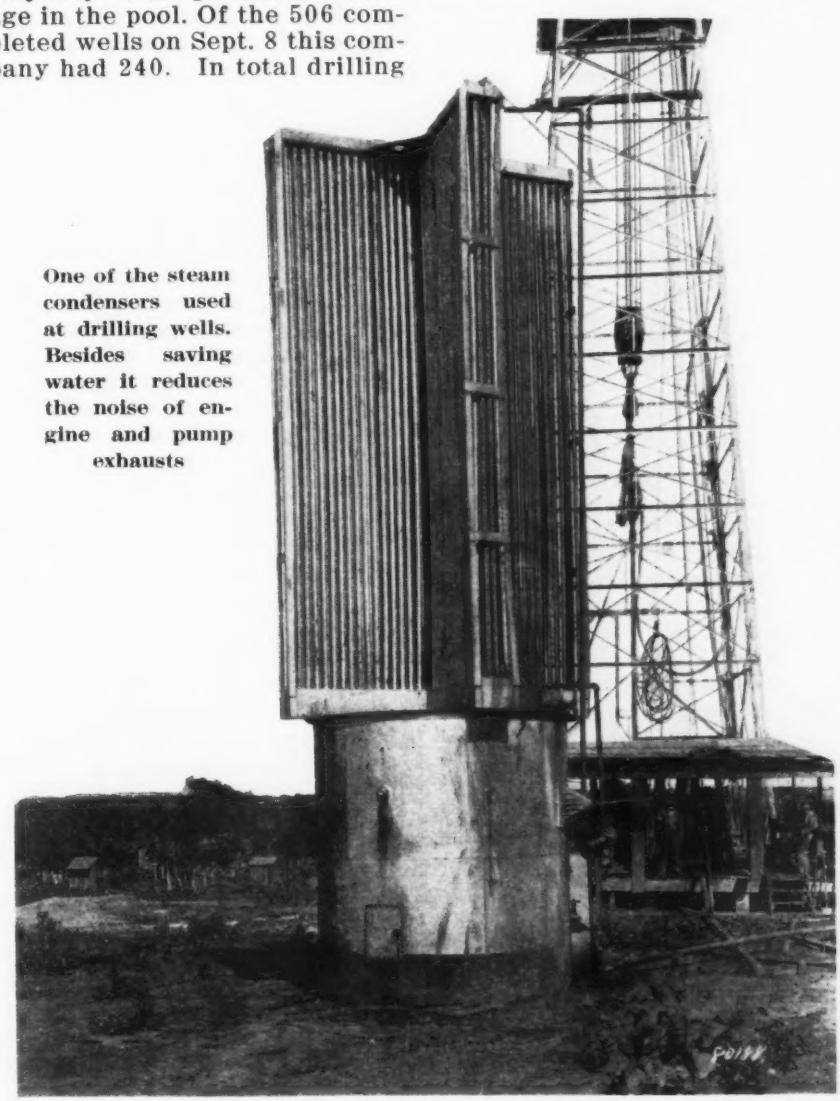
As of Sept. 1, the 480 completed wells had potential production of 2,941,984 barrels. The basis for this figure was the last production of each well. Now this is not a true estimate, of course, of what the field would be making at the end of 24 hours, if it were possible to open it to full production, but it is the only rating that can be given under the system of producing wells a few hours then shutting them in for several days.

With the tremendous depth of 6500 feet drilled—nearly one and one-quarter miles — the high pressures and large volumes of gas found and the huge flush production of the wells, equipment has been demanded that would control the terrific forces that are released. Pressures on early wells were as high as 2200 pounds; these have dropped with more drilling.

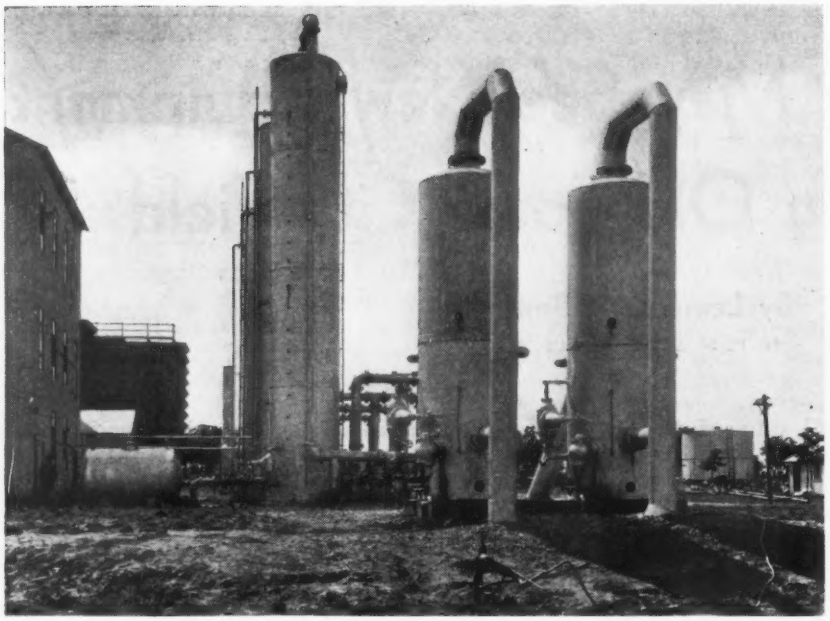
The drilling equipment must be of the heaviest and most rugged type, pipe must be sturdy so as to withstand its own weight and the external force directed against it and surface connections must be extra heavy. It is an expensive job to drill one of these wells. The average cost exceeds $150,000.

The field will celebrate its second birthday early in next December. The discovery well on the large structure was drilled by the Indian Territory Illuminating Oil Co., which has pioneered in the opening of several Oklahoma pools in the past five years. The "I.T.I." as the company is usually referred to in the trade, controls a large majority of the productive acreage in the pool. Of the 506 completed wells on Sept. 8 this company had 240. In total drilling operations it still leads with one-fourth of the total of 270. And of the 32,709,359 barrels of oil produced to Sept. 8, the I.T.I. had produced 14,822,145.

The field is immediately outside Oklahoma City, largest city of the state and the capitol. This city came into being with the opening of certain Indian lands to settlement in 1889. It has more than 180,000 population and is at this time enjoying substantial growth, partly brought



One of the steam condensers used at drilling wells. Besides saving water it reduces the noise of engine and pump exhausts



Separators at gasoline plant of Coline Oil Co.

on by the oil development on its southeast side.

The city is reached from Tulsa by two airplane lines which maintain regular schedules. The flying time averages about one hour. The 'Frisco railway is the direct rail route and makes the trip in a little more than three hours. The distance by automobile is 135 miles by the paved highway which passes through the historic Cushing field and Guthrie the early day capital of Oklahoma Territory.

The field affords some interesting contrasts between orderly and haphazard development. The discovery well was drilled in the center of 40 acres and the earliest locations made were on that basis. Complete agreement to develop the entire field in this manner could not be obtained and the spacing of one well to 10 acres was adopted. The majority of wells have been drilled on this size locations. Development continued northwest until several sub-divided parcels of land were proved to be productive and on these many wells have been drilled on locations much less than 10 acres in size.

The usual crowd of promoters selling "interests" obtained a foothold and several wells have been put down on less than one acre. This sort of thing is confined mainly to the north end of the field.

What the final proved acreage will be cannot now be predicted. The field in its southeast-northwest trend is more than nine miles long and it is about two miles wide at its greatest east-west point. Probably 8000 to 9000 acres can be considered proved at this time. On the south, west and east sides dry holes probably mark the limits but there is no doubt that considerable more territory will be added to the north.

In the latter direction development is now within the city limits and the city is holding down what, in the absence of regulation, would be a frenzied campaign. The city has enacted a forceful ordinance which regulates well spacing and by the requirement of a large bond to cover damages that might be sustained by property owners, many of the uneconomic wells are being kept out.

The whole course of development in the field has been one of using the most advanced methods. From the digging of the slush pits for the rotary rigs to the final bringing of the well into production, man's ingenuity has been at work to save time and money. Slush pits, for instance, formerly were dug with horses and scrapers. More and more the tractor and fresno and the clamshell bucket are coming into use. The latter is also used in digging the cellar.

More than twice the amount of concrete required for wells in the Seminole district is used at Oklahoma City for derrick corners, engine blocks and cellar walls. It is generally poured in two runs. Large concrete mixers are used, mostly at the location, although in some instances the concrete is mixed at a central point and delivered by truck to the locations.

Derrick sizes range from 122-foot height to 170 feet. There is only one of the latter size in the field. The trend now is toward the 24-foot base, 136-foot height. The manufacturer has been at work on the problem of keeping the weight as low as possible with the increase in strength required and special alloys and high carbon steels have met the situation in good manner. That it has been something of a problem is shown by the fact that dead load capacities of reinforced rigs have risen from 300,000 pounds to about one million.

The greater drilling depths have brought into use rotary equipment of a much heavier type than prevailed but a short while ago. Drum, line and jack shafts of draw works used in the Oklahoma City field are now 9, 8 and 7½-inch respectively, contrasted with the usual 6-inch maximum diameters. The weight of the whole draw works has been increased to 15 tons which is almost twice that of earlier types. Engines and pumps have been increased in size corresponding to that of other parts of the outfit.

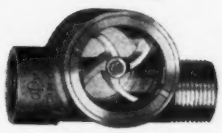
Wells are started with 18-inch hole, although there is now a tendency setting in to start with 20 to 22 inch. The first string of pipe is 15½-inch, which is set at 250 foot depth and cemented with 600 sacks. It is allowed to set three days.

Then the hole is carried down in 12½-inch size to a depth of 5300 to 5600 feet where 9⅝-inch size outside diameter casing, 40 pound special alloy, is set and cemented with 1500 sacks. This also sets three days.

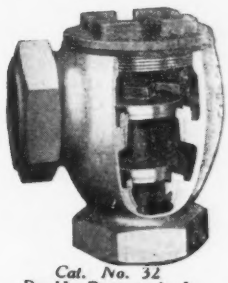
The casing point is in the Checkerboard or the Oolitic lime. The hole is reduced to 8⅛ inches and carried to casing point above the pay. Here 7-inch outside diameter pipe is set and cemented with 500 sacks. Six days after cementing the well is ready to drill plugs and complete.

While drilling inside the first string of pipe, 6⅝-inch drill

Equipment That Cuts the Cost of Repairs, Renewals and Replacements



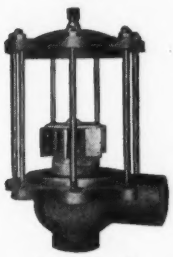
Cat. No. 44
Bronze Visi-Flo with Propeller



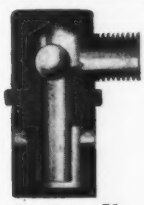
Cat. No. 32
Double Poppet Angle Check Valve

Cat. No. 27
Wet Hose Nozzle Valve

Cat. No. 176
Cast-Iron Plain Flush Fill Box

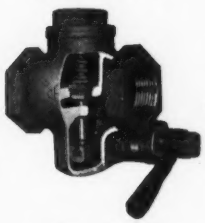


Cat. No. 55
Type A Visi-Flo



Cat. No. 75
Vacuum Breaker

Cat. No. 65
Male and Female Swivel Ell



Cat. No. 11
Bronze Globe Discharge Valve

Cat. No. 10
Bronze Angle Swing Check Valve

Cat. No. 62
Bronze Combination Visi-Swivel Gate Valve

Cat. No. 42
Double Poppet Vertical Check Valve

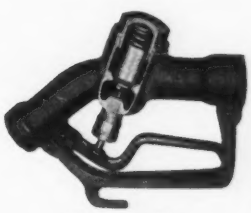
Cat. No. 43
Bronze Lock Type Gate Valve

O.P.W. valves and fittings for service stations and bulk storage plants bring to you a satisfaction shown in profits—a continuous service that means so much during the busy periods of the day.

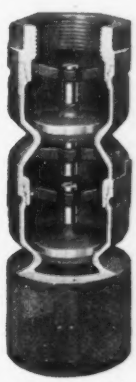
Each unit is made of high-grade material, thoroughly tested. Engineers and craftsmen combine to produce designs that will give dollar for dollar value in actual work and long life.

We have been specialists in this business over a long period of years. The fact that we are supplying some of the nation's largest buyers gives us confidence that we can please you.

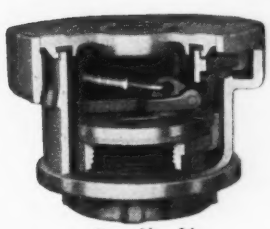
If your needs are unusual, let an O.P.W. engineer confer with you. Just for today—clip and mail the coupon.



Cat. No. 20
Pressure Nozzle Valve



Cat. No. 22
Bronze Double Poppet Foot Valve



Cat. No. 36
Cast-Iron Body Flush Fill Box (Lock Type)

OPW

Mail the coupon today ☛

The Ohio Pattern Works & Foundry Co.
2730 Spring Grove Avenue,
Cincinnati, Ohio

Send me a copy of your new catalog. I am particularly interested in

.....

Mail advertising literature to

Name.....

Company.....

Address.....

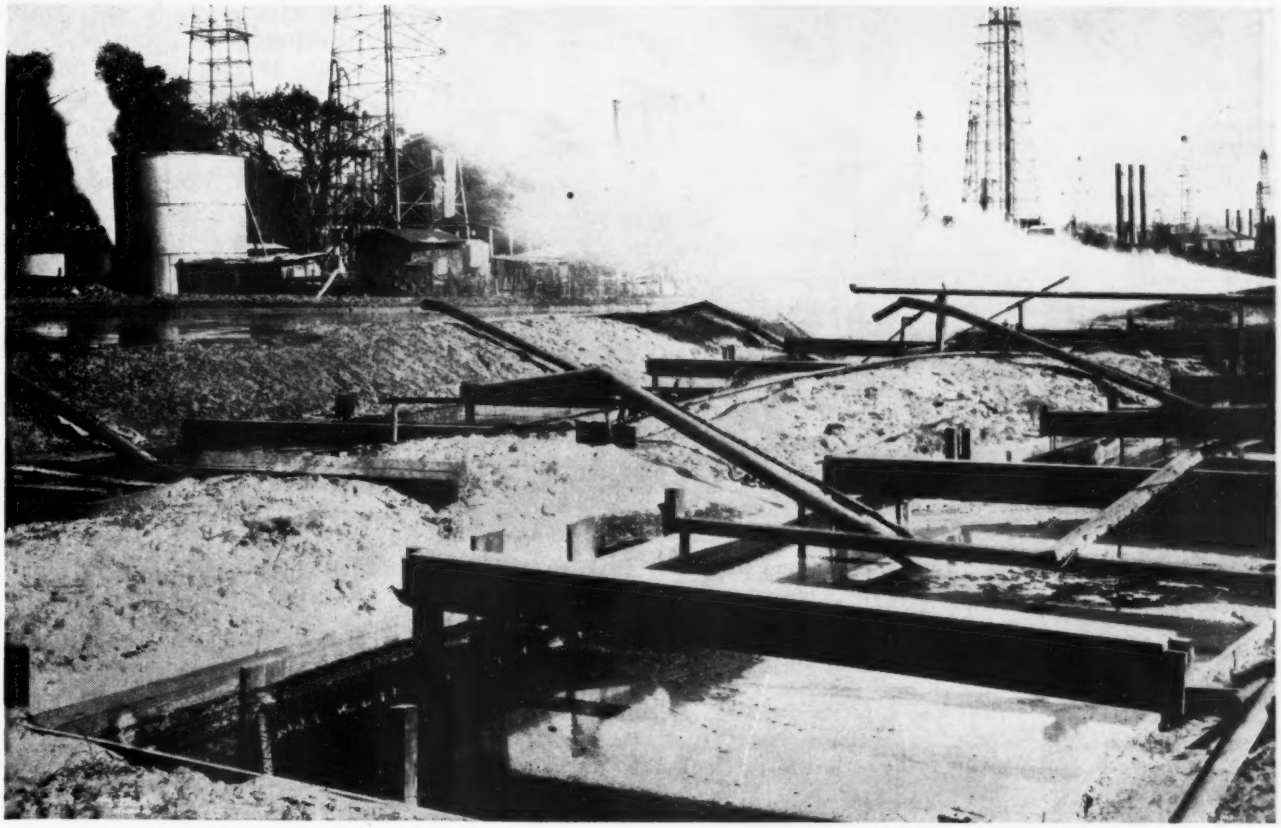
City.....State.....

Total Production of Oklahoma City Field to Sept. 8, 1930

Company	Lease	Location	No. of Mills	Prod.
Anderson-Prichard	Gibbons	2-11-3	1	1,265
Anderson-Prichard	Pest House	1-11-3	1	11,473
Anderson-Prichard	Roosevelt Pl.	2-11-3	1	3,340
Anderson-Prichard et al	Brown	14-11-3	1	3,705
Century Petroleum	Wyatt	2-11-3	1	4,500
Champlin Refining	McCulip	2-11-3	1	4,480
Champlin Refining	Naden	2-11-3	1	4,000
Coline	Claver	25-11-3	14	204,511
Coline	Olds	24-11-3	10	1,619,795
Coline	Warren	18-11-2	8	1,120,234
Continental	Sudik	6-10-2	3	64,645
Cromwell-Franklin et al	Trosper Park 12, 13 &	14-11-3	26	1,839,646
Denver P. & R.	Harvey	15-11-3	1	5,586
Hall-Briscoe	Holmes	10-11-3	3	73,256
Hall-Briscoe	Lindsey 14 &	15-11-3	2	69,986
Heenan & Coe	Cunningham	1-11-3	2	218,849
Independent	Harrell	2-11-3	1	2,725
Independent et al	Hatcher	10-11-3	1	5,339
I. T. I. O.	Banta	18-11-2	1	995
I. T. I. O.	Barker-Drake	14-11-2	1	140,959
I. T. I. O.	Bodine-Anderson	30-11-2W	3	175,181
I. T. I. O.	A. Bodine	24-11-3	6	516,703
I. T. I. O.	S. Bodine	30-11-2	3	129,054
I. T. I. O.	Borden	23-11-3	1	21,287
I. T. I. O.	A. Brokaw	13-11-3	4	58,078
I. T. I. O.	C. Brokaw	13-11-3	4	368,114
I. T. I. O.	Butterfield	18-11-2	1	103,036
I. T. I. O.	Button	19-11-2	5	1,242,127
I. T. I. O.	L. Canfield	19-11-2	2	165,391
I. T. I. O.	Canfield-Button	19-11-2	3	235,816
I. T. I. O.	Capshaw	23-11-3	1	5,781
I. T. I. O.	Carrico	14-11-3	2	15,017
I. T. I. O.	Coppinger	11-11-3	5	16,845
I. T. I. O.	Carff	11-11-3	3	7,992
I. T. I. O.	Drake	14-11-3	2	337,433
I. T. I. O.	Eacock	11-11-3	2	5,780
I. T. I. O.	N. Emerson	30-11-2	11	104,937
I. T. I. O.	Emerson-Joyce	25-11-3	2	4,628
I. T. I. O.	E. Farley	24-11-3	1	32,474
I. T. I. O.	L. Farley	19-11-2	4	481,873
I. T. I. O.	Farley-Fuzzell	19-11-2	2	372,925
I. T. I. O.	Ferndale	11-11-3	3	210,021
I. T. I. O.	E. Fortson	24-11-3	3	177,742
I. T. I. O.	Fortson-Farley	24-11-3	3	583,891
I. T. I. O.	Foster	24-11-3	1	33,981
I. T. I. O.	Forster Worley	24-11-3	1	30,997
I. T. I. O.	Fuzzell	19-11-2	3	1,284,924
I. T. I. O.	George	7-11-2	1	2,900
I. T. I. O.	Habegger	14-11-3	2	8,918
I. T. I. O.	Hammer	11-11-3	2	4,917
I. T. I. O.	Handt	11-11-3	1	2,722
I. T. I. O.	Hiddleston	19-11-2	1	70,352
I. T. I. O.	Holman-Gray	14-11-3	1	5,515
I. T. I. O.	Huffman	14-11-3	1	3,015
I. T. I. O.	Jennings	13-11-3	3	384,511
I. T. I. O.	Johnson	25-11-3	8	482,109
I. T. I. O.	H. W. Jones	1-11-3	4	178,832
I. T. I. O.	L. Jones	30-11-2	13	426,456
I. T. I. O.	Jones Company	1-11-3	3	282,959
I. T. I. O.	Mac Knox	14-11-3	3	97,172
I. T. I. O.	K. Henning	24-11-3	3	157,093
I. T. I. O.	Lemmon	11-11-3	1	4,502
I. T. I. O.	Mackey	26-11-3	1	21,120
I. T. I. O.	Mid-Texas	23-11-3	1	6,009
I. T. I. O.	M. K. T.	35-12-3	1	4,317
I. T. I. O.	Mt. Vernon Ht.	11-11-3	1	909
I. T. I. O.	Okla. City	24-11-3	1	1,034,976
I. T. I. O.	Okla. State Land	36-11-3	5	82,411
I. T. I. O.	Pasadena Hgt.	14-11-3	2	150,477
I. T. I. O.	S. Peterson	25-11-3	8	213,221
I. T. I. O.	Phillips	1-11-3	1	7,586
I. T. I. O.	Precure	14-11-3	1	35,577
I. T. I. O.	E. Precure	11-11-3	2	8,047
I. T. I. O.	Renismer	14-11-3	1	5,355
I. T. I. O.	M. Reynolds	6-10-2	2	1,233
I. T. I. O.	Salasman	32-11-2	5	27,862
I. T. I. O.	Speegle et al	24-11-3	3	78,135
I. T. I. O.	Spillman	14-11-3	2	20,534
I. T. I. O.	J. Starkey	11-11-3	1	1,475
I. T. I. O.	M. Sudik	31-11-2	8	530,923
I. T. I. O.	E. Theimer	12-11-3	6	333,629
I. T. I. O.	Thomas-Fuzzell	13-11-3	3	717,033
I. T. I. O.	Trosper	13-11-3	10	1,091,791
I. T. I. O.	C. Trosper	11-11-3	4	25,187
I. T. I. O.	C. E. Trosper	11-11-3	1	29,921
I. T. I. O.	E. Trosper	14-11-3	2	30,542
I. T. I. O.	H. G. Trosper	14-11-3	3	37,916
I. T. I. O.	L. Trosper	12-11-3	2	202,633
I. T. I. O.	P. Trosper	18-11-2	1	2,068
I. T. I. O.	Trosper-Hughes	11-11-3	1	15,858
I. T. I. O.	M. Unsell	23-11-3	5	50,095
I. T. I. O.	Unsell-Krager	23-11-3	3	243,661
I. T. I. O.	Verne	13-11-3	2	105,600
I. T. I. O.	Viewpoint	10-11-3	1	5,796
I. T. I. O.	M. Warden	24-11-3	1	57,258
I. T. I. O.	Walters	25-11-3	6	164,420
I. T. I. O.	Werner-Farley	23-11-3	3	105,630
I. T. I. O.	Wheeler	13-11-3	3	322,590
I. T. I. O.	Walkre-Anderson	25-11-3	3	34,002
I. T. I. O.	Williams	23-11-3	1	4,132
I. T. I. O.	Williamson-Canfield	24-11-3	2	34,810
I. T. I. O. et al	Boulevard Add.	14-11-3	1	1,452
Jones Drilling Co.	Sullivan	1-11-3	1	13,061
Julian	Houser	14-11-3	1	11,153
Julian	Sheppard	14-11-3	1	11,396
Marco Oil Refining	Holder	2-11-3	1	22,080
Mid-Kansas	J. Browning	18-11-2	2	249,948
Mid-Kansas	Fortson	24-11-3	5	1,114,579
Mid-Kansas	Mollman	23-11-3	3	145,003
Mid-Kansas et al	Trosper-Browning	18-11-2	1	7,157
Mid-Texas	Community	1-11-3	1	43,594
Phillips	Trader	36-12-3	1	8,971
Phillips et al	Jones	1-11-3	1	6,075
Plains Petroleum	Boulevard View	14-11-3	1	4,968
Prairie-Slick	Hiddleston	19-11-2	8	1,518,320
Prairie-Slick et al	Sigmon	32-11-2	6	52,080
W. R. Reynolds et al	Hastings	1-11-3	1	34,487
Shaffer et al	Childs	14-11-3	1	778,206
Shaffer et al	Jones Com.	1-11-3	1	36,562
Shell	Egermeir	23-11-3	1	3,664
Shell	Petty	30-11-2	7	939,525
Sinclair	School No. 54	36-11-3	16	810,957
Sinclair	School No. 57	36-11-3	4	259,871
Sinclair	Stamper	30-11-2	6	591,696
Sinclair	Vencl	21-11-2	15	664,091
Sinclair & Amerada	Kuster	30-11-2	10	198,245
Sinclair-Independent	Donnell	23-11-3	1	7,204
Sinclair-Independent	School No. 69	36-11-3	1	25,025
Skelly	Dunn	1-11-3	1	112,445
Skelly	Hoopes	31-11-2	8	786,892
Skelly et al	Dillon	2-11-3	1	8,787
Skelly et al	Tanner	10-11-3	2	5,515
Skelly et al	Ainsworth	10-11-3	4	15,965
Slick	Barley	1-11-3	1	77,872
Slick	Campbell	3-11-3	1	13,876
Slick	Classen	2-11-3	2	15,412
Slick	Daugherty	2-11-3	1	3,272
Slick	Foote	2-11-3	2	9,342
Slick	C. G. Frost	10-11-3	1	2,404
Slick	Frost Hgt.	10-11-3	4	16,823
Slick	Glidden	13-11-3	2	551,711
Slick	Martin	1-11-3	1	28,440
Slick	Moore	2-11-3	1	1,538
Slick	Page	14-11-3	2	8,365
Slick & Atkinson	Alexander	2-11-3	2	26,692
Slick & Atkinson	Atkinson	1-11-3	2	33,992
Slick & Atkinson	Baker	1-11-3	4	39,116
Slick & Atkinson	Crawford	1-11-3	1	13,883
Slick & Atkinson	Dannruether	1-11-3	1	1,853
Slick & Atkinson	Dunivan	1-11-3	1	30,353
Slick & Atkinson	Houghton	1-11-3	1	81,288
Slick & Atkinson	Malner	2-11-3	2	26,840
Slick & Atkinson	Storie	2-11-3	1	18,757
Slick & Atkinson	Townsend	1-11-3	1	17,885
Slick & Atkinson et al	Zeckerle	13-11-3	1	185,809
Slick & Atkinson et al	Carter	1-11-3	1	49,708
Slick & Atkinson et al	Hoops	31-11-2	8	294,253
Slick & Atkinson et al	Hussman	29-11-2	1	7,756
Slick & Atkinson et al	Dennis	11-11-3	1	15,344
Slick & Atkinson et al	Haddleston	14-11-3	1	2,456
Slick et al	Houston	2-11-3	1	582
Wirt Franklin	Eacock	11-11-3	1	51,260
Wirt Franklin	Holder	2-11-3	1	2,636
Wirt Franklin	Lowery	12-11-3	9	2,152,376
Wirt Franklin	Page	36-12-3	2	12,982
Wirt Franklin	Theimer	2-11-3	9	202,406
Wirt Franklin	Wright	2-11-3	2	16,720
Wrightsmith	Smith	2-11-2	1	6,440
			506	32,709,359

Total pipeline runs from field 31,343,601 bbls.

Note: The foregoing figures represent oil produced in the name of each company without segregating the amount due each where ownership is divided.



Slush pit construction at one of the Oklahoma City wells. Note timbering required to hold back caving surface formations

pipe is used. Inside the 9-inch casing 4½-inch drill pipe is the size and 3½-inch inside the 7-inch pipe. These drill pipe sizes refer to outside diameters.

It is common practice to use four boilers of 125 horsepower each. This is more steam than is required, but cleaning of boilers can be done without loss of time in drilling. Pressures as high as 350 pounds are maintained. Some boilers of the superheater type are now in use.

A few wells have been drilled by electric power and with the encroachment into the more thickly settled part of the city, it is likely that a considerable number will use electricity. Less space is required for the outfit and it runs more quietly.

Completion of the wells has been something of a problem throughout. The first method adopted was that of drilling in with full column of heavy mud in the hole, then bailing this down to the point where the well pressure would overbalance the mud and the well would flow. It was then permitted to flow into the air until it had cleaned itself of mud.

Later special methods were devised. One is the use of a special trap which fits over the casinghead and is securely anchored. After the mud is bailed down, the trap is closed and the flow goes through a separator where the mud settles out, thence into an oil separator and on to the tanks.

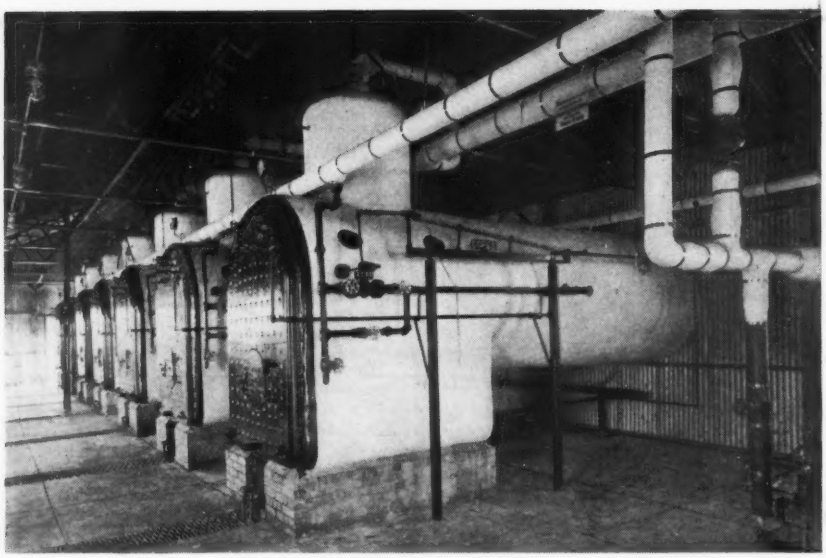
Another method is to "wash in" the wells. Water is circulated through screen, perforated, or, in some cases, drill pipe until the mud is cleared from the hole. Then the water is bailed down until the well flows into the separators. This method has been successful wherever used. It is desirable, as is the trap method, for bringing in wells near buildings where the flow of oil into the air would not only damage property but would create a fire hazard. In the older part of the field, far removed from dwellings, the original method of bringing in wells is still used to great extent.

The use of a double master gate is standard practice and on some wells there are three. The cutting action of sand has constituted a problem that has been disturbing. In the part of the field first developed production came from a lime formation and no difficulty was experienced. Later, as the field grew, it found certain sand zones productive at levels about the same as the lime.

Connections can be cut within a few seconds when the sand starts out with the oil and on a few of the wells much difficulty was experienced in shutting in. Several types of hoods made of heavy steel have been used to retard the abrasive action of the sand.

Enormous quantity of gas is found both in the oil wells and in sands higher in the stratigraphic column than the oil production. There is, therefore, plenty of fuel for all operations and in addition a considerable quantity is taken from the fields by natural gas distributing companies.

The water supply has not been so simple as that of fuel. The North Canadian river is close and has constituted the principal source of supply, but in low-water season the supply, while adequate, carries much silt and is troublesome as boiler feed water. Some water wells have been drilled in the field to augment the supply and one company, by drilling several



Boiler house of Indian Territory Illuminating Oil Co. at gasoline plant on Button lease

wells near the river bank, has nearly as much water as it needs.

Disposal of salt water early in the life of the field called for special measures. The lime producing zone quickly developed large quantity of salt water. The only nearby stream through which it could be disposed is the North Canadian river and as it is the source of supply for a number of towns below the field, its pollution was out of the question.

A co-operative company was former by the principal operators and a pipeline laid from the field across the divide between the North and South Canadian rivers. An enormous reservoir was created near the South Canadian and the salt water is impounded in this artificial lake.

Production practices in the field are still in their infancy. Nearly all of the wells still flow and with the severe proration measures that have been in effect for more than a year, there has been little occasion to test pumping and gas lift methods. At this time the proration plan calls for production from each well 16 hours out of every 12 days. That is a theoretical 5½ per cent of allowed production. Besides this, wells which are completed are required to remain off production 76 days after the first 24-hour flow. This penalty is to equalize new completions with wells drilled earlier and which suffered that amount of shut-in time.

Such gas-lift work as has been done has been principally on the wells that produce from the lime formation. It has not been especially successful as the percentage of water in the fluid lifted is very high. Some work has been done in tubing wells for natural flow.

One case was highly satisfactory. The well was making 600 barrels of oil and 30 million feet of gas, the ratio of gas to oil being 50,000 feet to the barrel. A combination string of 3 and 4¾-inch tubing was run and the well currently produces 2800 barrels of oil to five million feet of gas, or a ratio of 1785 cubic feet to the barrel.

Within a few days certain wells that have ceased to flow will be equipped to pump. It is an experiment that will be closely watched by all operators. One thing in favor of pumping is the straightness of the holes in the field.

The field has outlet at this time of about 271,000 barrels but the overproduction in other fields over the country has compelled this field to be exploited far less than the outlet. The following figures show the present rated capacity of pipe lines:

Company	Capacity
Empire	40,000 bbls.
Magnolia	26,000 bbls.
Oklahoma	20,000 bbls.
Prairie	55,000 bbls.
Sinclair	60,000 bbls.
Shell	12,000 bbls.
	213,000 bbls.

Capacities given are limited by the pumping facilities. It is possible in the case of most of these lines to effect a substantial increase by stepping up the rate of pumping. The outlet will soon be increased, as the Champlin Refining Co. is laying an 8-inch line into the field to move oil to its refinery at Enid.

In addition to the pipeline outlet, Coline Oil Co. has gathering lines and loading rack capable of putting 20,000 barrels into tank cars each day; Gulf States (V. H. Smith and associates) have a rack that can handle 10,000 barrels; the I. T. I. O. 20,000 barrels and the Shell Petroleum Corp. 8000 barrels daily.

In one respect the field presents an unusual appearance. Missing are the huge tank farms that surround nearly every large field. As the accompanying table shows, pipeline runs have nearly equaled production. Under the severe proration the field has been held to the quantity that purchasing companies demanded. One large storage construction program is under way at this time. Sinclair Oil & Gas Co. is putting up 28 tanks of 80,000-barrel capacity each.

Eleven gasoline plants are in operation in the field, with total capacity of 365 million feet of gas daily. They are of the absorption type with compressor equipment to move the residue gas into fuel lines. Gasoline plant operation has been seriously handicapped by the proration of oil. The supply one day will be too great for the plants to handle and the next day it will be far under capacity. It has been impossible for the companies to figure the amount they are likely to produce in any month.

Oklahoma City crude oil is high in lubricating values and will long occupy place in the industry for that reason. It ranges in gravity on the A.P.I. scale from 37 to 41 degrees. In a few instances wells that have large gas volume yield oil that is almost gasoline. This is understood to be condensate of the gas.

See it at TULSA!

the *original* and *accepted*

FAN-COOLED "EXPLOSION-PROOF" MOTOR

Booth No. 44, California Bldg., will be "EXPLOSION-PROOF" MOTOR HEADQUARTERS.

ALREADY used by 21 leading oil companies, the Louis Allis "EXPLOSION-PROOF" or type E motor will be an outstanding feature at the Tulsa petroleum exposition. Be sure to see this remarkable motor . . . originated by Louis Allis engineers 3 years ago . . . accepted almost immediately by the petroleum industry . . . the motor that made possible safe electric drive in explosive atmospheres.

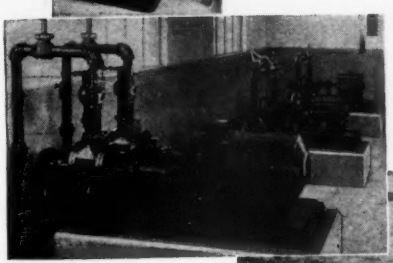
Let us explain what a genuine "EXPLOSION-PROOF" motor really is. Study the three safety features not found in ordinary enclosed fan-cooled motors. See the results of Underwriters' severe tests. Note the small size of type E motors . . . which generally fit on *stock machines* in the same space as "open type" motors.

You will see for yourself *why* type E eliminates the need of fire walls . . . why it is accepted as the modern, efficient, approved drive for refineries and natural gasoline plants . . . why leading oil companies are *standardizing* on Louis Allis "EXPLOSION-PROOF" motors for use wherever gasoline, naphtha, propane, or other volatile products are made, used, or handled.

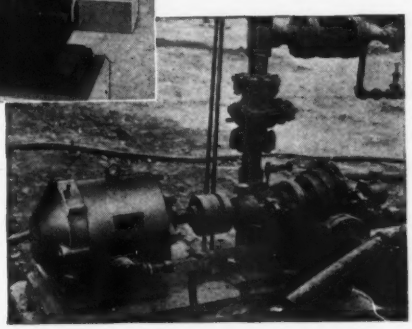
FOLLOW THE LEADERS . . .
Standardize on Louis Allis "EXPLOSION-PROOF" Motors.

On Centrifuge as used for "dewaxing."

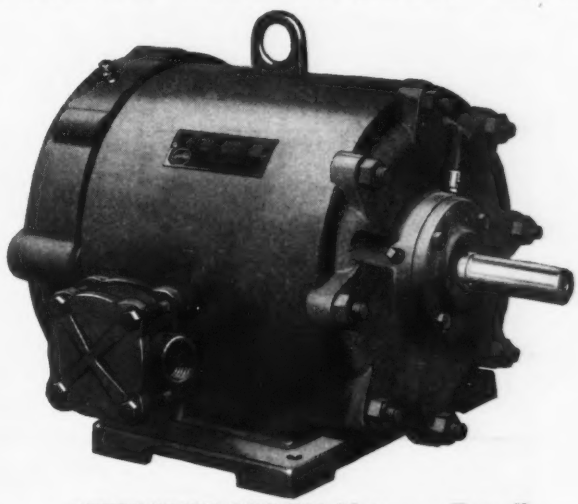
Louis Allis "EXPLOSION-PROOF" motors are widely used in Gasoline Plants and Refineries as direct drive for Pumps, Centrifuges, Fans, etc. Here are some typical installations.



In loading-rack pump-house at one of Oklahoma's largest refineries.



On pump installed outdoors at large Natural Gasoline Plant in the mid-continent.



"EXPLOSION-PROOF" Motor . . . Type E
Tested and approved by Underwriters' Laboratories for operation wherever petroleum products are made, used, or handled.
BUILT IN SIZES ¼ to 100 hp.

WARNING!

Do not confuse the Louis Allis "EXPLOSION-PROOF" Motor with non-approved so-called "vapor-proof" motors. Real "EXPLOSION-PROOF" motors must be specially constructed and must pass severe explosion tests to be approved by Underwriters' Laboratories for use in Class I explosive atmospheres.

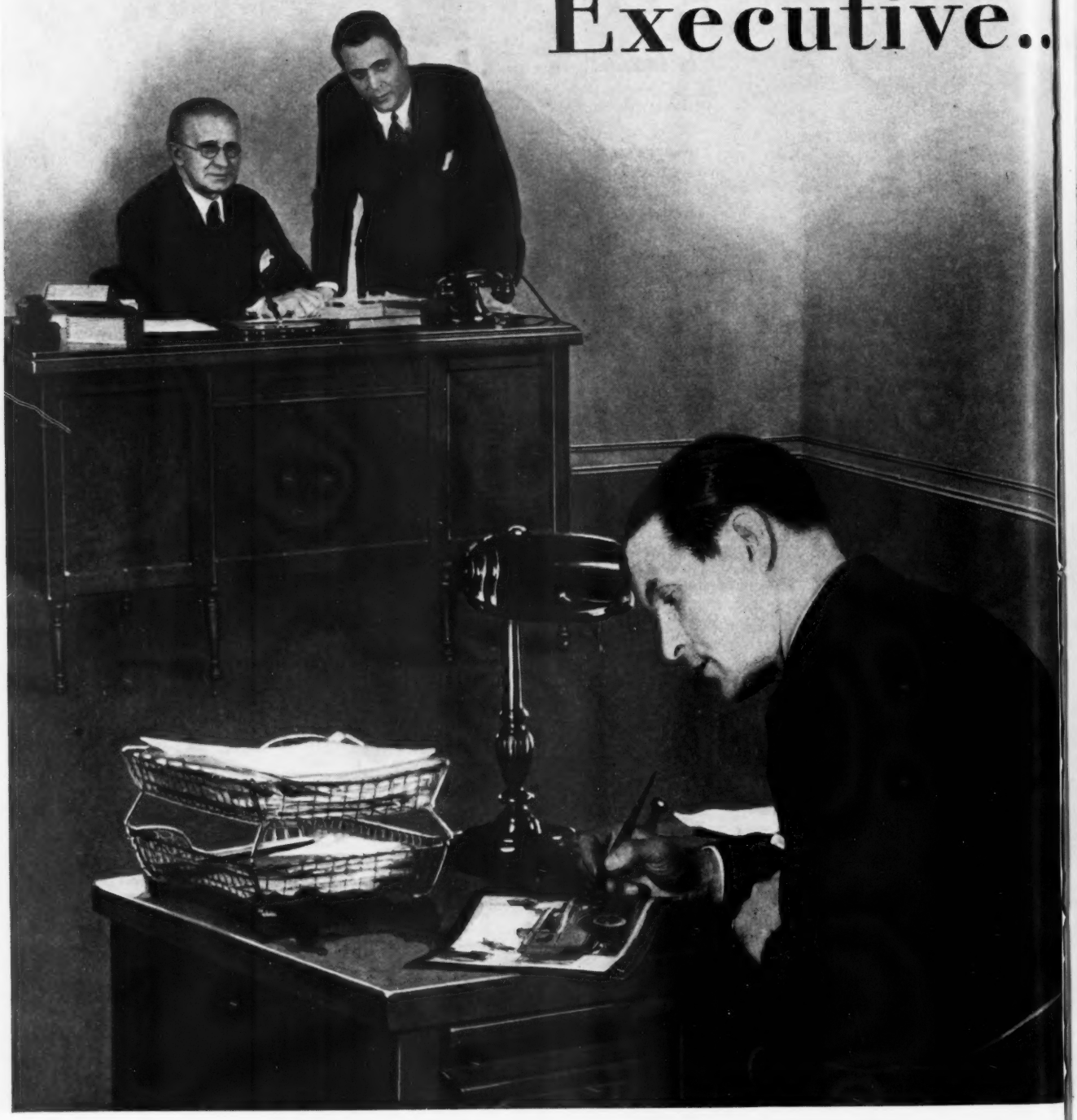
LOUIS ALLIS

"EXPLOSION-PROOF" *Electric* MOTORS

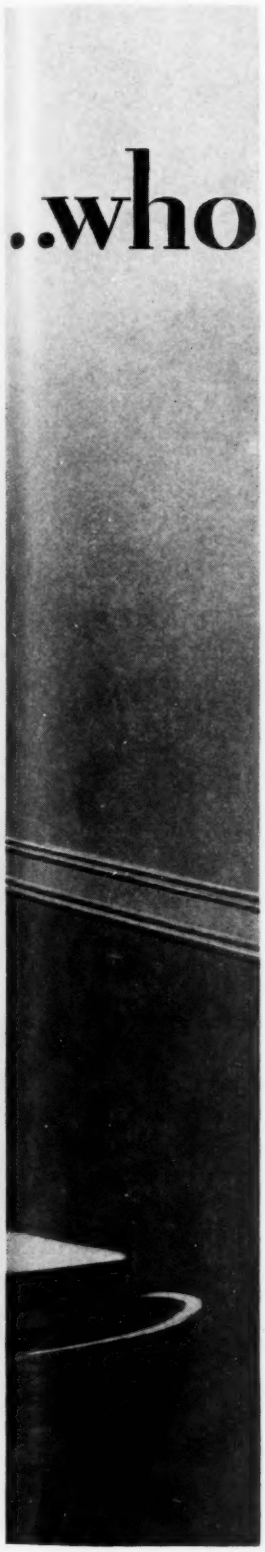
THE LOUIS ALLIS COMPANY
MILWAUKEE, WIS.
Motor Specialists for 29 Years — Offices in Principal Cities

Sales Offices: **Tulsa, Houston, St. Louis, Chicago, Detroit, Cleveland, Pittsburgh, New York, Philadelphia, Boston, Buffalo, Los Angeles, San Francisco . . . . and other principal cities.**

... *and now* a New Sales Executive...



MEYERCORD



..who *Draws No Salary!*

"For 15 years we've needed that man. Now, in 15 minutes, we've added him to our staff . . . without adding a penny to our payroll."

"But where do we need him? We're loaded with executives from the oil well to the market."

"Yes, and there at the market we stop. What about identification? What about sales demand? Where's our executive to make the public remember our product, and demand it? There at the final, vital competitive stage, we need the Meyercord man . . . to do for us what he's done for the biggest petroleum companies in the field . . . to conduct our merchandising publicity as systematically as our production and distribution."

"Splendid! But how will he do it?"

"With Meyercord decalcomania, replacing all the other expensive media with one uniform identification. That one step, Fred, saves us, first, $2400 a year for materials . . . second, the time costs of high-priced decorators, and third, the expense of painting delays. Any man, however, inexperienced, can apply a Meyercord decalcomania transfer in a few minutes. As for trademark designs and placing, we get the services of the 100-man staff of the Meyercord Service Department free with the Meyercord transfers we've bought. So, Fred, our identification responsibilities are over. We have a new executive to worry over them—a nationally noted sales executive who draws no salary!"

Let the man behind the nation's trademark get behind yours. Let him show you the impressive list of manufacturers in whose companies he holds the same executive position he could hold with equal effectiveness in yours. Let him show you the savings produced by his improvements. And above all, let him show you the matchless uniformity of identification made possible by Meyercord Decalcomania Transfers. A Meyercord representative will call at your request.

TRANSFERS

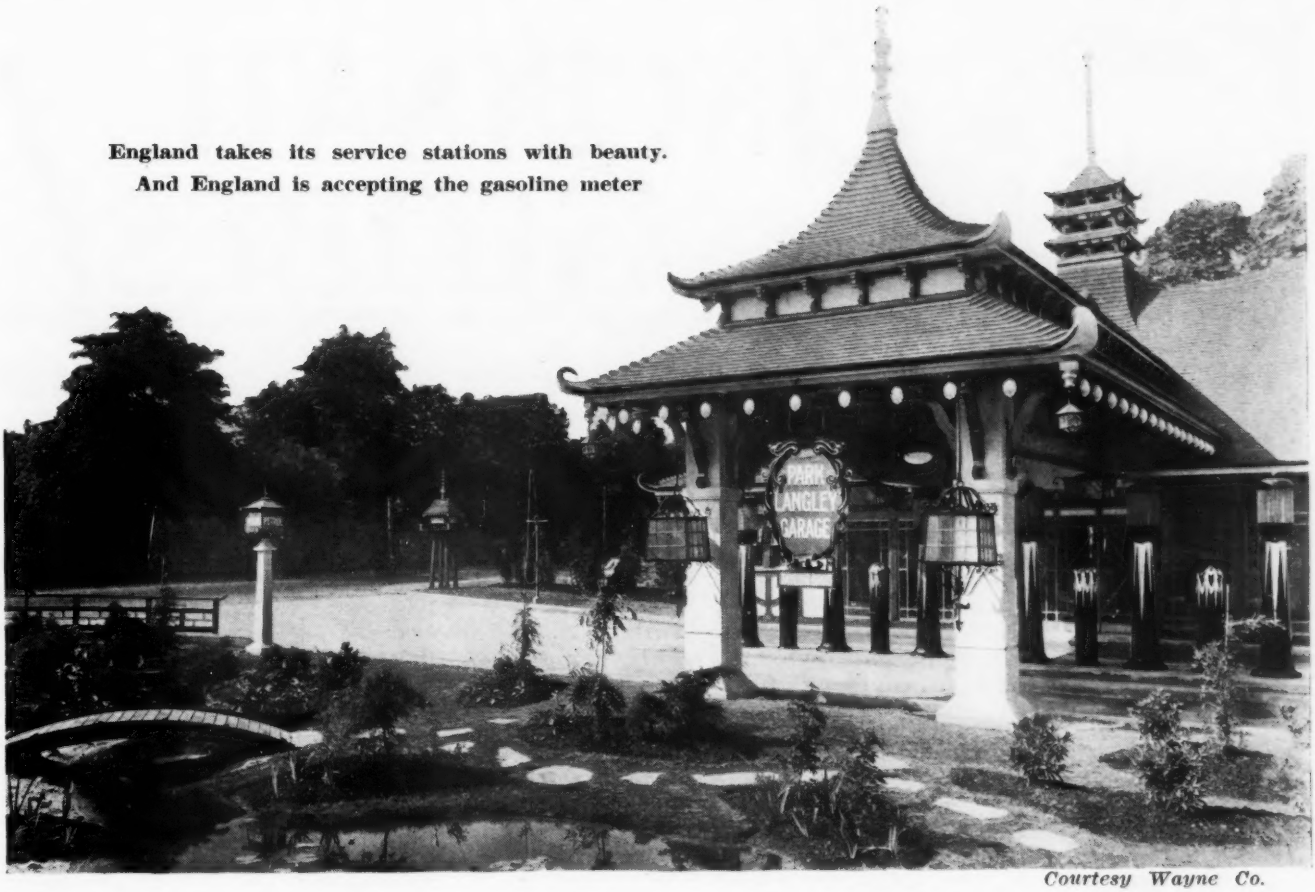
THE MEYERCORD COMPANY

120 S. La Salle Street Chicago, Illinois

A reserve supply of crude and finished products at the refinery is the Jobber's insurance. Without this protection at his source of supply, the Jobber's business could not be assured of a permanent future. » » » » » Insure with El Dorado now for your own future protection.

The EL DORADO REFINING Co.
•• Established 1916 ••
EL DORADO, KANSAS

England takes its service stations with beauty.
And England is accepting the gasoline meter



Courtesy Wayne Co.

Marketing Equipment Finds Place In Tulsa Oil Exposition

By E. L. Barringer
N. P. N. STAFF WRITER

IF OLD Rip Van Winkle had postponed his long nap in the mountains some 150 years, then returned to view the business world as it is today, he would find much to marvel at in the retail marketing of petroleum products.

Much of what he would find most new will be displayed at the International Petroleum Exposition at Tulsa, Oct. 4 to 11, where for the first time a special building houses exhibits of marketing equipment.

A 20-year period is a small pebble on the highway of progress, on a long time view, but with the present generation geared to high speed thinking and acting on its business problems this span of years can wreck havoc with accepted standards. "There is nothing so constant as change," is a slogan used in the advertising of one business house. It typifies developments of retail petroleum marketing in the last twenty years.

Supposing old Rip would drive his bright, new automobile of the 1930 vintage down the broad, paved highway, constantly keeping in mind conditions as they were prior to the beginning of his nap in 1910. The new set-up of servicing that auto would be as marvelous to him as the car itself and the paved highway.

"What's that?" would be his exclamation at the service station. The one-stop station would be found in a new dress, with a new dignity. And Rip's mechanical bent would find much of interest in the development of station equipment.

Much water went over the dam in those 20 years, and while Rip is sleeping let us look at the growing service station. Rip's 1910 model auto obtained its gasoline from the grocery store. When kerosine was the main illuminant for the home, the grocery store was the logical place to market this product, and gasoline was first sold there.

The old kerosine storage tank and pump moved from the rear of the grocery store to the front. It was a wooden box, opening at the side near the top

CINCINNATI GLOBES

They catch the eye 24 Hours a day.

Salesmen on the job day and night . . . in sunshine and storm, summer and winter . . . no layoffs for indisposition or vacations . . . steady, perennial producers of business . . .

. . . that's the story of Cincinnati Globes . . . glass signs that sell millions 24 hours a day . . . here, there and everywhere you see these eye-attracting beacons of trade.

Cincinnati Globes speak your message with forceful dignity that creates the desire to buy. They have beauty of form and color . . . their arresting power is perpetual, unfading.

Metal Frame or All Glass Globes . . . in either type, the faces are separate and replaceable. Your design is not merely painted on . . . it is fired into and becomes a permanent part of the glass . . . you get great brilliancy in colors that do not dry out or oxidize and that cannot be scraped off. By every business standard, Cincinnati Globes give the effectiveness you strive for . . . and that's economy.

Without cost, our Art Department is at your service in presenting your message to advantage. Use the Coupon below, without obligation.

MAIL THIS TODAY

The Cincinnati Advertising Products Co.
York and Colerain Ave., Cincinnati, Ohio, U. S. A.

Please send detailed information about Cincinnati Globes, giving prices etc., without obligating the undersigned in any way.

.....

.....

.....

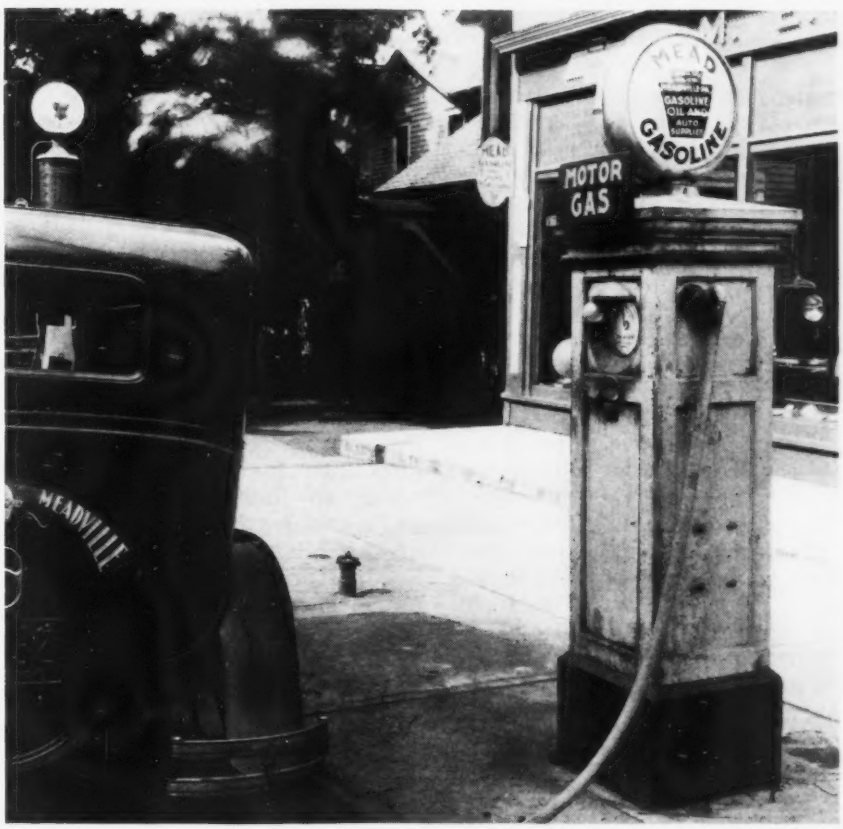
The Cincinnati Advertising Products Co.
Our GLASS Signs SELL MILLIONS
24

The old and the new in Erie meters. The curb meter, shown below, is one of the first types. Ten modern meters are installed at this Sinclair station in Milwaukee, shown above

so the gasoline, now handled there, could be pulled through the hand pump into the container, thence emptied into the auto tank. The storage tank was in the bottom part of the box.

Shortly after Rip began his modern sleep the equipment manufacturers brought on the market a pump designed for servicing the automobile with gasoline direct from the underground storage tank. This was a tall, enclosed, metal one-gallon blind pump. The grocery store, the drug store, and the auto sales and accessory stores sold gasoline through these pumps at the curb.

About this time the drive-in type service station was peering over the horizon. It was a sharp departure in marketing from the standpoint that gasoline and motor oil were divorced from groceries, drugs and automobile sales and accessories. Here was a place of business depending on petroleum products exclusively for its livelihood.

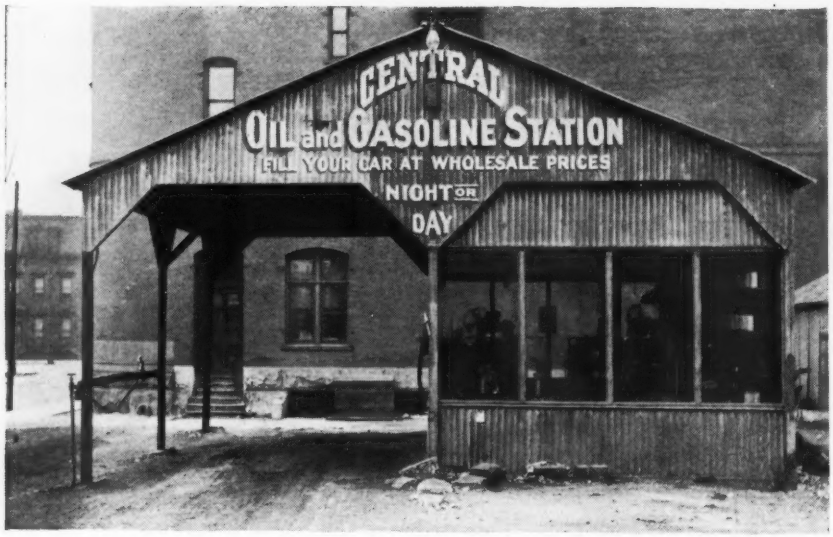


The blind one-gallon pump was worked on until it threw five gallons. This development is dated at about 1913. Then came the visible pump on the market about the close of the World war. In place of pumping gasoline direct from the underground storage tank to the automobile, it moved to a measuring glass bowl on the top of the pump, then it flowed to the auto.

Sometimes progress seems to back track to get ahead. In the case of the meter, which came out about the middle of the last decade, this route was taken. Gasoline again was shunted through a measuring device, direct from underground storage to the auto's tank. The electric motor or compressed air replaced hand power. The station attendant handled the nozzle, instead of a pump handle, and gasoline, measured, flowed in a continuous stream.

The equipment to deliver gasoline to the automobile tank has held a large share of the attention of service station machinery. Back of this is the fact that gasoline is the most sought commodity offered by the industry. It is purchased by the public more frequently, and in larger quantities, than any other petroleum product. Speed, with accuracy, in delivery is desired because the buyer wants his gasoline, and wants it in a hurry.

A trend towards a bigger meter, one throwing more gasoline in a minute, is seen by the Wayne Co., Fort Wayne, Ind. Busses, trucks and motor boats are the customers for the larger meter. These require large fills, and could be serviced by



Courtesy Wayne Co.

An old timer. The photo was taken in 1911. This is a Central Oil & Gasoline Station in Detroit. Note the gasoline outlets at the front of the building, and on the pump island—the pumps are inside

a meter throwing 25 gallons a minute.

For the past five years the trend has been to meters, reports the Sharpsville Boiler Works Co., Sharpsville, Pa., and it will continue for the next few years. This manufacturer sees "speedy service" in selling gasoline as having two sides —the workman, and his equipment. The meter enables quicker work through fewer operations, leaving more time free for the personal side of "speedy service."

The meter enables the size of the gasoline sale per customer to be increased, reports Martin & Schwartz, Buffalo. This manufacturer believes a measuring device of a definite quantity limits the purchase of the customer, but with a continuous flow of gasoline the attendant can sell the customer the quantity that the tank will hold. The size of the increased sale per customer is estimated at 50 per cent. The meter also keeps the attendant at the nozzle which reduces the possibility of overflowing.

In the middle west, east of the Mississippi river, the meter is coming into its own this year, reports S. F. Bowser & Co., Fort Wayne, Ind. A similar report on the meter trend comes from Erie Meter Systems, Erie, Pa. This manufacturer is finding acceptance in the middle west, and one large marketer west of the Mississippi river is buying meters in car lots. The newer service stations are being equipped with meters, it is reported, and the older equipment is being shunted to countryside outlets.

Labor savings and safety are other features of the meter, pointed out by this manufacturer. With hand operated pumps a 500-gallon day would be a real task, but with meters many times this amount could be moved, and one attendant could do the work of two.

Lighting of the service station has received an increasing amount of attention. The station's primary job of course is to sell, but before it can sell it must get the customer into the lot. The motorist is moved to stop at a given station by many reasons, and one of these is adequate illumination.

Especially is this true with the additional night traffic, and at night the well lighted station stands out among a group of dimly visible competitors.

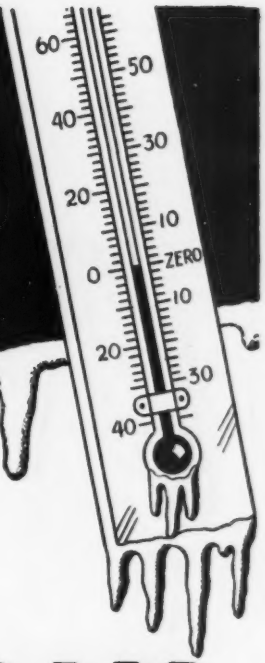
The illumination of many types of business stores has been given much attention in recent years, and along with them is the service station. Many of the newer stations have used floodlights effectively, and equipment manufacturers believe this is the trend.

One of the major oil companies last month opened a new station, with enclosed lubrication lifts, in one of the largest cities in the country, and the main lighting unit is floodlights. Around the building is a row of lamps, hidden under the eaves, for effect. But the main lighting is from a single pole near the sidewalk for an illuminated company insignia sign over the walk, and the floodlights turned on the drives and station front.

The revamping of the service station has brought the floodlights in vogue, in the opinion of Martin & Schwartz.

Floodlights are the main illumination at this Cleveland service station for products of The Texas Co. The lights under the eaves are hidden from view, and are for effect. This station was opened in August, and is on a main traffic artery where competition is severe

What about next winter ... will you be able to give efficient service in all kinds of weather ...



You will with

BALCRANK

LUBRICATORS AND AIR COMPRESSORS

Balcrank "D" Lubricator, foot operated, develops 6,000 lbs. pressure in any weather with any chassis grease. Balcrank "E" Lubricator, identical in construction but Air Operated

Balcrank Electric Multiple Outlet Lubricators and Balcrank Central Units are ideal for modern super-service stations . . . capacity 100 to 500 lbs. grease . . . Balcrank Booster Guns develop up to 6,000 lbs. pressure.

The popular Balcrank P. C. (pound capacity) Chassis Lubricator, air operated, dependable, efficient, fast . . . develops 6,000 lbs. pressure with ease . . . a year around profit maker

BALCRANK AIR COMPRESSORS

Balcrank Ball Bearing Air Compressors powerful, dependable, silent, combining advanced engineering, finest of materials and expert workmanship.

When Old Man Winter drives the thermometer down around zero that's when you need the extra power, punch and stamina that is built into Balcrank Lubricators and Compressors. That's when you'll appreciate how far superior Balcrank Service Station Equipment is to ordinary equipment. Balcranks are built to meet just such conditions; to stand up under the hardest trial. Look now to winter. The first step is to get more information about the Balcrank line.

Balcrank Lubricators and Ball Bearing Air Compressors are designed by specialists in the use and application of compressed air. They are designed and built to meet every present and future demand of the service station. Small station or large, among the many models there is one that exactly fits your requirements. Let us tell you about them. THE CINCINNATI BALL CRANK CO., Cincinnati, Ohio.

Right—Balcrank "ER" Electric Chassis Lubricator handles any chassis grease in any weather; withstands all the rigors of winter, same as Type "E" excepting 13 lb. barrel and rack.

"WILPEP" NATURAL GASOLINE

Will improve Your MOTOR FUEL

Quick start and get away
Snappy in operation
Powerful—Clean
Improves "anti-knock" qualities

TODAY, more than ever before, the practical value of "Natural Gasoline" is being recognized.

"WILPEP" NATURAL GASOLINE, used in correct proportion, adds many necessary qualities to Motor Fuels that are obtainable in no other way. Some of the largest blenders in United States are now using "WILPEP".

Thirty-five Plants, with a potential yearly output of many millions of gallons, are under our control—shipments are made in tank cars under direct supervision of our own Traffic Department, assuring you REAL SERVICE.

"WILPEP" NATURAL GASOLINE is always available on wire or phone order.

All grades are well within specifications of N. G. A. of A.

Attractive propositions offered on contracts and quantity shipments.

Return coupon today—no obligation

WILLOCK OIL CORPORATION

First National Bank Bldg.
Pittsburgh, Pa.

Tear off here

WILLOCK OIL CORP.
1st Nat'l Bank Bldg.
Pittsburgh, Pa.

Date.....

Please {ship / quote} .....cars (grades checked) your "WILPEP" NATURAL GASOLINE

A ☐ AA ☐ B ☐ BB ☐ C ☐

Shipment {prompt ☐ / future ☐} date.....

Please quote contract price.....cars per month, shipment from (date.....) to, (date.....)

Shipping Points: ....

Signed: ..... P.O..... State.....

Styles change in station design and equipment along with clothing. In 1915 the blind pump, sold 70 gravity gasoline at a 2 cent premium. Fifteen years later meters of the S. F. Bowser & Co. have replaced its former blind pumps, and a modern building with enclosed lubrication and auto laundry replaces the old ideas on station design

The well lighted station is inviting to the customer.

The canteen type globe on top of the gasoline meter is doomed, according to the Erie Meter Systems. As the lighting at the station is improved this globe light is becoming unnecessary. This manufacturer also believes floodlighting is the proper method.

The many small lights that were used in years past didn't provide good working conditions, in the opinion of S. F. Bowser & Co., and the station is turning to floodlights.

Costs are reported to be the guiding factor in the development of motor oil display equipment. For the lone dealer station costs may not be considered so important, but where costs must be considered for hundreds or thousands of stations a small saving amounts to an important item.

Handling of motor oil may be through a meter, reports the Erie Meter Systems. But this unit would be expensive now, considering its purchase in quantities, and it must be an economical piece of equipment to have ready acceptance. While speed in handling oil is not as much a factor as with gasoline there is just as great need to keep a definite inventory check and to prevent stock losses.

The fountain is the nearest approach to a meter in oil handling equipment today. But again costs come in, and the fountain has not taken with the larger distributors. The varied number of oil brands stocked at service stations also complicates the equipment problem. On the whole the larger distributors have shown a preference to have a small investment in oil displays, and have purchased drums or containers with the oil pumped by hand, one manufacturer said.

As for air standards, the Wayne Co. believes the development will be in accuracy and speed of inflation. Eventually the station will have an air boy, Erie Meter Systems reports, to keep "every Tom, Dick and Harry from abusing the standard."

Correct inflation of tires, and checking them at least once a week, has been preached to the general automobile owning public as a means of obtaining maximum efficiency from tires. But all good intentions are useless if the air indicator is incorrect, and there is a class of customers who will abuse the air standard, as well as steal the soap and towels from the rest rooms.

The air standard, along with radiator, windshield and crankcase service, will some day be taken away from the gasoline pump island, in the opinion of Martin & Schwartz. These services will be grouped at some place about the station lot, leaving the islands free for selling gasoline.

Back of the air standard is the air compressor. Increasing use is found for the compressor as the station expands. Tire inflation formerly was the only load. Today there are numerous uses, as tire inflation, the various high pressure grease guns, moving gasoline from storage tanks through meters, moving oil, and operating lubrication hoists.

Trend of the compressor is indicated as being to an adequate sized machine for the job. Too frequently a small sized compressor has been installed and it works beyond its capacity. The machine runs almost continuously and is racked to

This is a station modeled after a Cape Cod cottage. Since it is in a village of fine residences owned by wealthy summer resorters the station had to consider the sales value of attractiveness. Note the absence of a canopy, the concrete drives near street level, and the grouping of the meters of the Sharpsville Boiler Works Co.

pieces before its time is up.

Development of the lift and high pressure grease guns have been the high lights of lubrication service. New dignity has been added to lubrication in recent years through the enclosed lift. One oil jobber has predicted the end of the outdoor pit, that it cannot survive in the lubrication field against the enclosed lift.

The past year has witnessed the rise of the newer station with the enclosed lifts, and this feature is being added to old stations or the old station is being torn down to be replaced with a modern structure. Claims for the lift, over the pit, are ease of operation for the workman, and sales value.

Customers desire to watch the work of greasing their car, either through curiosity or through skepticism over a thorough job, and their desire is gratified when the car goes up on the lift. Many customers also get their first look at the underworks of their car when it is on the lift.

Then there is the cleanliness feature. Many jobbers operating new type stations point with pride to the walls and floors of their grease rooms—they can be washed. In fact one major oil company is building the station's outside walls and roof of a washable material for the sake of cleanliness, and for low maintenance cost. Clean floors, walls, and equipment in the lubrication department are conducive to keeping the customer around and to sell him on service.

Pressure lubrication guns have kept step with improved lubrication of the automobile. Equipment for chassis, and transmission and differential greasing, for spraying springs, for cleaning transmissions, differentials, and for cleaning crankcases are on the market. Then there are the hand guns for specialized lubrication points, as water pumps, universal joints, hub caps, shock absorbers, and clutches.

Modern equipment plays its part in selling as well as working for the lubrication department. An Illinois jobber embarking on an elaborate lubrication service decided to select his equipment to impress the customer that here was a station equipped for every type of greasing service. Every piece of his equipment was to be labeled as to its use, more for the benefit of the customer than of the workmen.

Old Rip Van Winkle would have been amazed at the amount and type of equipment at a service station of today compared to the 1910 version of a gasoline outlet. Along with his amazement at the equipment he would gasp several times at the stations themselves.

The early service station had a dirt, gravel or board driveway. It had no particular charm regarding architecture or form. The old pictures are amusing today, but those were the pioneer days, and in 1950 the modern station of today may look just as antiquated.

In design and building material today's station is tending towards harmony with the neighborhood. The service station is a neighborhood business, and the good will of the surrounding property owners is a difficult thing to get, so to overcome objections the oil industry has undertaken a structure that fits into the picture. Some companies have a number of designs, selecting the one best suited for the location and size of the lot.

Attractiveness has been considered in design and materials. From the competitive viewpoint attractiveness is desirable, and it has decided many times with tourists whether they turn in at this or that service station.

Accessibility is another factor receiving more consideration. The trend here is towards as large a drive and as near the street level as possible.

"We lay out our stations for the greatest accessibility of the poorest driver on the road—the woman," said a high official of one of the largest marketing organizations. Sharp turns, abrupt inclines from street levels, all have been avoided as much as possible. The drives were constructed to be and to look easy to drive on.

The canopy apparently is slated for the discard. It has been a time honored custom to consider the canopy a necessity, especially so for selling gasoline in rainy weather. Apparently some marketing executives have backed off and looked hard and long at the canopy. As a result some attractive stations have been built without it. And if it is raining so hard that the customer would drive by the station minus a canopy it is doubtful if the customer would be in the mood to buy gasoline any place.

Gum Formation and Deterioration in Knock Rating

The highly cracked gasolines of today must be carefully protected in storage to avoid serious deterioration.

Oxygen, of course, is the greatest accelerator of both gum and deterioration in knock rating; but moisture also seems to speed up the process.

Not only must rain be kept out but oxygen and moisture laden air should not be allowed to blow through the tank and break up the blanket of saturated vapors which normally covers the surface.

A good tight roof with all openings OCECO equipped affords the best protection for your products.

Oceco Roof Manheads are gas tight . . . water tight . . . spark proof. There are no liquid seals or gaskets . . . nothing to get out of order.

Oceco Vent Unit consisting of double flange vent collar, flame arrestor, conservation vent valve and snuffer.

THE OIL CONSERVATION ENGINEERING CO.

877 ADDISON ROAD — CLEVELAND, OHIO

Engineering and Sales Service:

90 West St., New York — Tulsa Trust Bldg., Tulsa, Okla.

Box 552, Beaumont, Texas

Vogt

have a definite

BECAUSE the Safety Code Committee of one of the world's largest refineries were so severe in their demands, only riveted construction met definitely their requirements for the fabrication of the Separators, Settling Drums, and Bubble Towers shown here ready for export. Riveting positively assures a 90%

Riveted Pressure Vessels

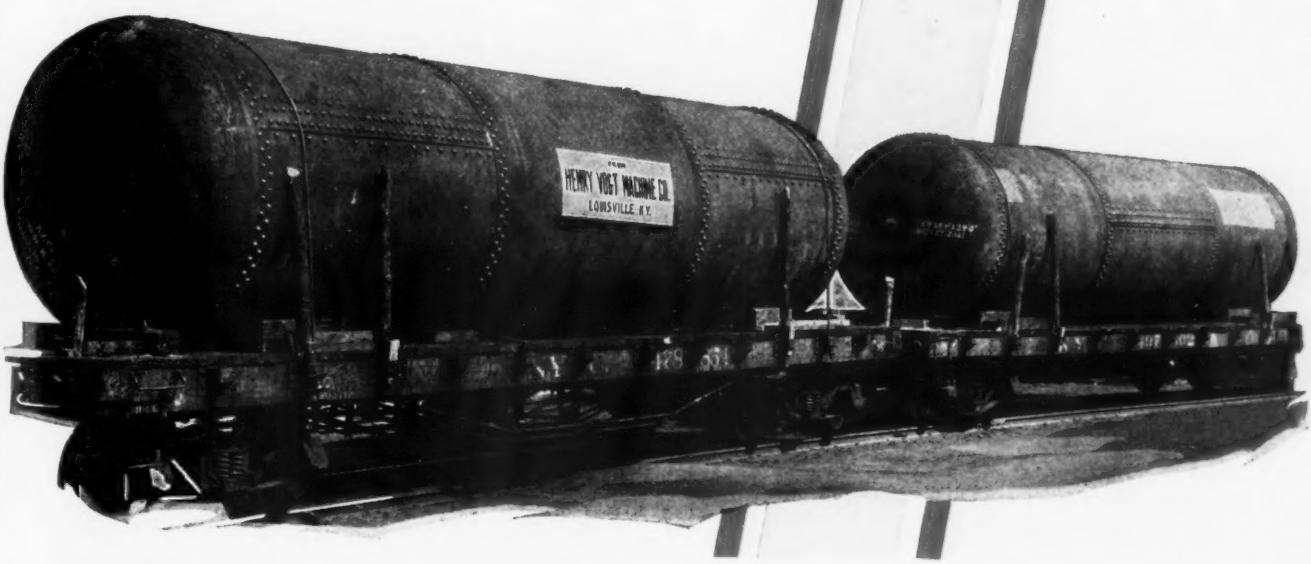
factor of Safety

efficient joint which precludes all doubt, especially when built with the modern equipment found in Vogt shops.

HENRY VOGT MACHINE CO.
(Incorporated)
LOUISVILLE, KY.

NEW YORK CHICAGO CLEVELAND DALLAS PHILADELPHIA

Manufacturers of Oil Refinery Equipment, Drop Forged Steel Valves and Fittings, Water Tube and Horizontal Return Tubular Boilers, Ice Making and Refrigerating Machinery, Heat Exchangers.



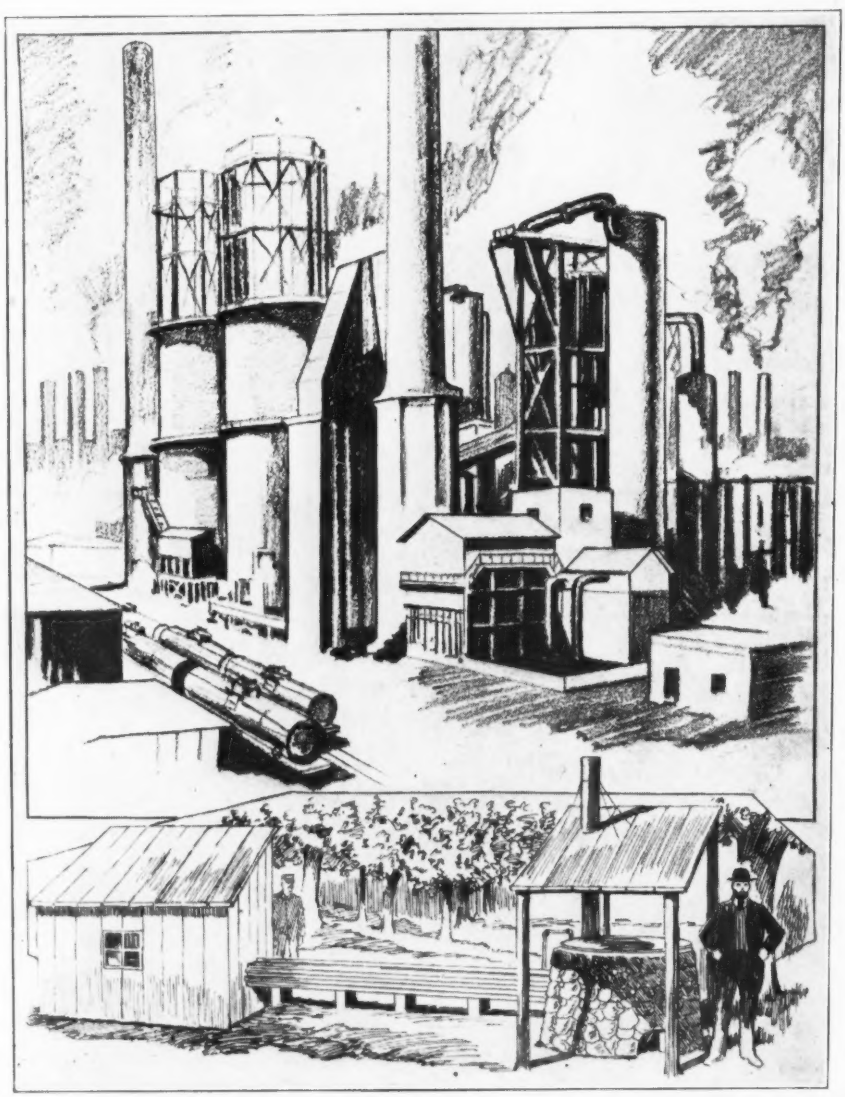
Hydrogenation Process Pictured At Tulsa Oil Show

TULSA, Sept. 22

EXHIBITS of refining and natural gasoline manufacturing equipment will play a more prominent part in the International Petroleum Exposition this year than ever before.

A new building to house exhibits; more space contracted for by manufacturers of this type of equipment; displays calculated to interest layman and technician alike; such is the evidence of the part the manufacturing branch of the oil industry is to play in this year's show.

Four million dollars has been estimated as the value of the equipment to be displayed. Distillation units, heat exchangers, retorts, working models, the most delicate control instruments will all be displayed in greater numbers than ever before.



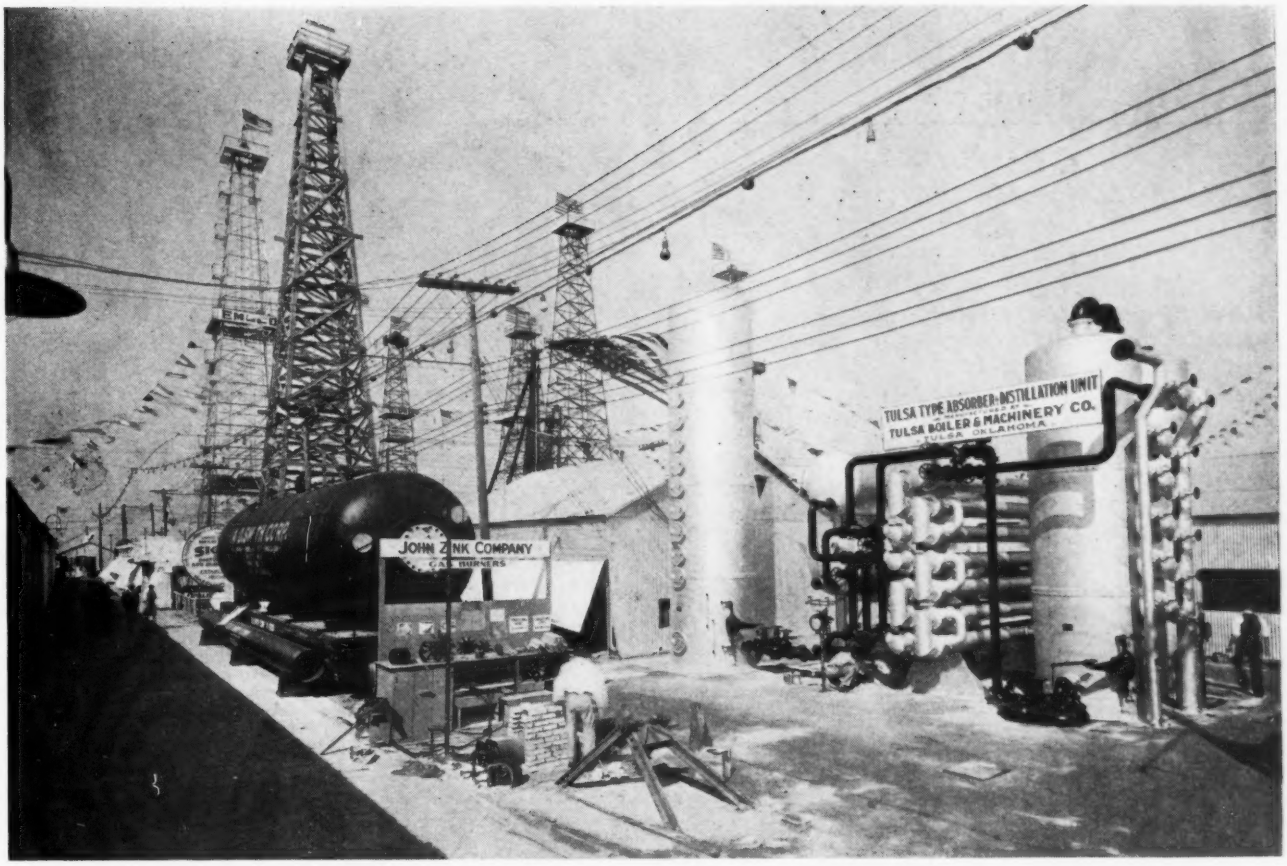
No greater contrast between the early and the up-to-date in oil equipment could be imagined than that between the first refinery, built in 1860, and the modern hydrogenation plant, as pictured in connection with the exhibit of the Barnsdall Oil Co.

The refining and natural gasoline branches have set a rapid pace in improving their operating technique and efficiency. It wasn't but a few years ago that the refinery operator was satisfied who recovered an average percentage of gasoline from his crude equal to the A.P.I. gravity of that crude. The lubricating qualities of the oils produced were more a matter of the quality of the crude than of knowledge and control on the part of the refiner.

Steadily, the refinery technicians have eaten their way into the residuum, taking more and more gasoline out, and improving and controlling the qualities of their by-products. With combination reducing and cracking units developed to a point where some 80 per cent gasoline can be recovered in normal plant practice, it appeared the practical limits had been reached.

BUT the refining experts went even further. Hydrogenation was evolved, and plan promulgated for making it available to the industry. Although still a newcomer to the industry so far as commercial scale operati n is concerned, hydrogenation i: expected to convert practically the entire charge of crude to gasoline.

Perhaps no development within the industry has aroused more comment, and more speculation than this same hydrogenation. Refinery workers of all grades, from the chief executive to the assistant stillmen, are curious to see the process in operation.



Typical exhibits of natural gasoline equipment at last year's International Petroleum Exposition

They will have that opportunity at this year's exposition. On a huge billboard, installed by Barnsdall Oil Co., will be a diagram of a hydrogenation plant. Vari-colored pulsating lights will show the flow of oil through the plant.

In order that visitors may more easily grasp the tremendous strides that have been made in refining knowledge, a working reproduction of T. N. Barnsdall's little "kettle" refinery will be on display adjacent to the animated flow sheet of the hydrogenation plant.

No better illustration of drastic changes in design and technique could have been arranged than in bringing side to side the first and the latest developments in converting crude oil into a usable product.

During the past year the principal trend in the standard types of refining and natural gasoline manufacturing equipment has been in arranging for a more sensitive control of both temperature and pressures. With more and more companies interested in taking off accurate side cuts, fractional distillation equipment is due to receive a lot of attention from the operators visiting the show.

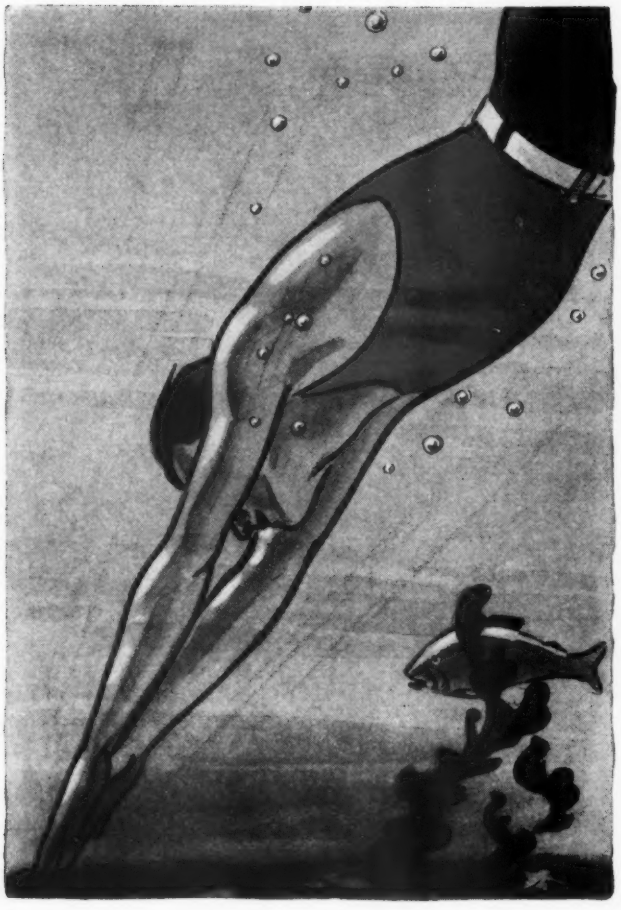
Most of the instrument companies will have exhibits on the grounds featuring the improvements they have made in their control indicating and recording instruments. Taylor Instrument Co., Brown Instrument Co., Foxboro Co., Refinery Supply Co., all will exhibit their latest models.

THE trend the past year has been to the pilot type of control. The closer control on both pressure and temperature that this type of operating permits has made the change one regarded by manufacturer and operator alike as a step forward.

One of the improvements which will be noticed by experienced operators will be the simplification of the recording instruments. In the past, the control room of a gasoline plant has had as many charts, indicators, etc., as the dash of a present day airplane. A new instrument, capable of recording three temperatures or pressures simultaneously will be on exhibit. Another feature of the instrument is that it can be flush-mounted, making it unnecessary to have the instrument protruding from the wall of the control room.

No little effort has been made to reduce the deterioration of valves and fittings caused by corrosion and oxidation. A feature exhibited for the first time this year will be diaphragm valves with stainless steel stems and Cadman plated, and anti-oxidation treated diaphragm plates.

One of the chief improvements in lubricating oils which has been stressed to the public the past year has been the lowered pour point and wax-free features of motor oils. Improved application of refrigeration methods has made possible the complete dewaxing of the lubricating oil, resulting in turn in oils that will do their work under very low temperatures. Samples of the new lubricants will be exhibited by the various refining companies.



Right to the Bottom!
with

SIMANCRO CASING

New—modern—exclusive—this high tensile alloy steel casing combines super-strength and toughness,—vital properties when deep drilling hazards are encountered.

New, and yet proven, as evidenced by the fact that over several million feet have already been used without a single failure.

Available in 95,000 pounds and 110,000 pounds minimum tensile grades.

SPANG, CHALFANT & CO., INC.

General Offices: **CLARK BUILDING, PITTSBURGH, PA.**

Sales Offices: CHICAGO, ILL. NEW YORK, N. Y. ST. LOUIS, MO. PITTSBURGH, PA. TULSA, OKLA. LOS ANGELES, CAL.
Welded Mills: ETNA, PENNA. SHARPSBURG, PENNA. ***Seamless Mills:*** AMBRIDGE, PENNA.

Since 1828

SPANG WELDED *and* STANDARD SEAMLESS

OIL COUNTRY TUBULAR PRODUCTS

Modern Engineering Saves Drilling Crew Many a Backache

TULSA, Sept. 6

FOR the latest generation of engineers and production men the Seventh Annual International Petroleum Exposition is just a show. The newest and most striking improvements in equipment they will take as a matter of course. They are a hard group upon which to make an impression but a difficult one to keep from getting information.

To the old-timer, however, whose experience in the oil producing industry dates back almost to the spring hole, there will be plenty of novelty in the exposition this year. Even the 20 and 30-year men will be struck with the idea of progress. Speed, mass, utility and convenience will be their principal mental notes as they study the various exhibits.

The difference between the older and younger groups is just a matter of background. The latter owes a seeming indifference to lack of contrast. There has been little in their experience to cause them to note any great changes and those that have come within their field have so closely followed one upon the other that they seem but a natural sequence.

Regardless of age or experience, however, it is hard to imagine that any oil man visiting the Tulsa exposition could fail to note the increased tempo at which the industry moves. No longer does the supply man wait for future demand to force a change in the design of his product. He has already built for the future. He is anticipating the needs of the producer, and every tool of the industry is being constructed to meet the requirements of tomorrow.

There is nothing in the early history of oil development to indicate the present day supply man is following a precedent. The written records, as well as the verbal accounts concerning the activities of earlier days, show that the producer was of necessity also an inventor. Considering the tools with which his drillers had to work they accomplished wonders.

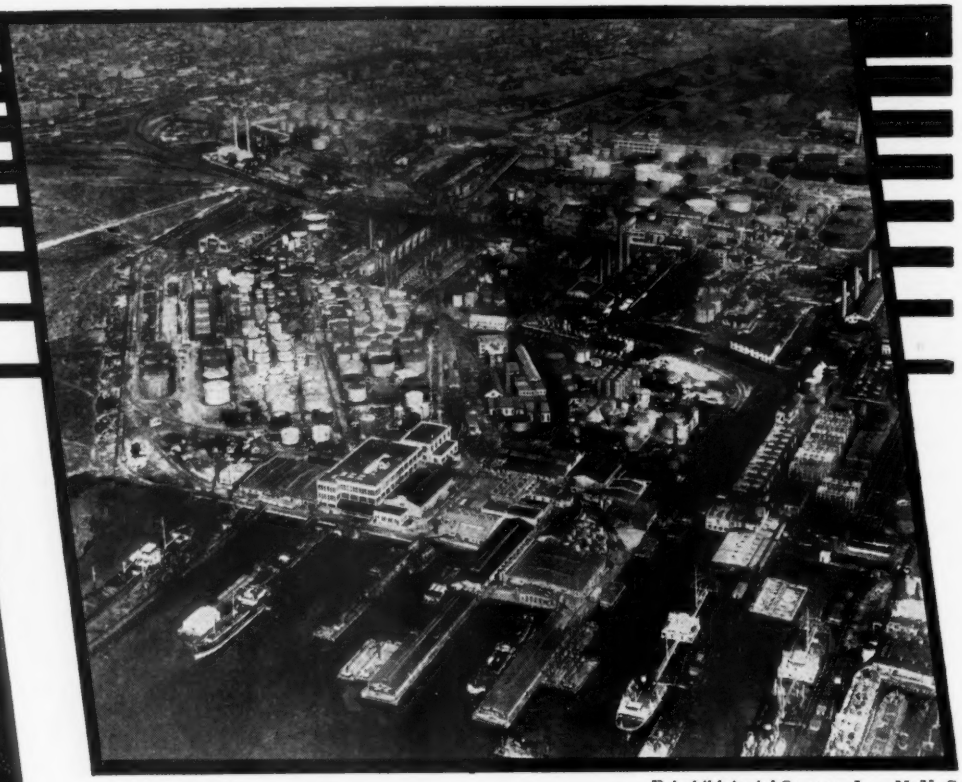
From bits to boilers and from beam to bailers the early equipment was of the most rudimentary type. The drilling line was hemp rope and, though the motion was slow, a real blow could be delivered with the tools. This probably accounts for the hangover desire of some older drillers to put a "cracker" of rope on the end of wire cable even now.

When trouble came in the form of a "jumped" pin, the whole stem was shouldered by the driller and toolie and carried to the local blacksmith shop for repairs. Fishing tools were invented on the spot to retrieve the dropped string and the crew "shut her down" while all hands worked at the forge to make them. Many of those tools have not been improved on, except in their coupling joints, where better metals have been used.

While on the subject of metals, some of the early casing was often made of copper. Sometimes cast iron was made to serve the purpose, though it was not only more difficult to make but harder to handle. The usual size was 4-inch and 2-inch copper tubing was run through it. As a packer on the latter, a seed sack was placed around it, the seeds swelling when in contact with water. It probably answered the purpose, though it is an odd contrast to the present, efficient, spring and rubber packers.

It is difficult to pick out any individual piece in present day oil field equipment that has made an outstanding change. There have been too many changes and all are interdependent on each other. What strikes the observer first, how-

Here is one of the reasons why modern drillers can discuss just any subject and speak with authority. In this particular case the electric drilling equipment with its automatic control permits time for reading. Note the padded seat and the push buttons. The well is in the Oklahoma City field



Refinery of the Tidewater Oil Company at Bayonne, N. J., users of genuine Wrought Iron pipe.

Fairchild Aerial Surveys, Inc., N. Y. C.

This Time . . .

Make It Genuine Puddled Wrought Iron!

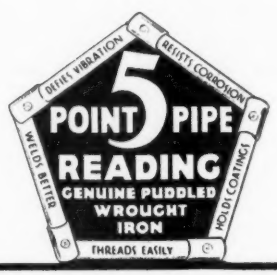
When acid waters and corrosive crudes take the heart out of ordinary pipe, replace with Reading 5-Point Pipe—Genuine *Puddled* Wrought Iron. *Then* you'll end excessive, unnecessary pipe maintenance costs. *Then* you'll learn the meaning of real pipe dependability. Long years of use in refineries prove that Reading 5-Point Pipe outlasts ordinary pipe, several times over!

Since 1848, Reading Genuine Puddled Wrought Iron Pipe has been known for its remarkable resistance to corrosion—for its immunity to vibration—for its tight, leak-proof joints. Take no chances with substitutes—look for the Reading name and indented spiral mark on every piece of Reading 5-Point Pipe.

Reading pipe distributed by:
Frick-Reid Supply Corp.
Bradford Supply Co.
Republic Supply Co.
Superior Tube Co.
Our own stocks at Houston, Texas

READING IRON COMPANY
Reading, Pennsylvania

Atlanta	Cincinnati	Tulsa
Baltimore	St. Louis	Seattle
Cleveland	Chicago	San Francisco
New York	New Orleans	Detroit
Philadelphia	Buffalo	Pittsburgh
Boston	Houston	Los Angeles
	Kansas City	



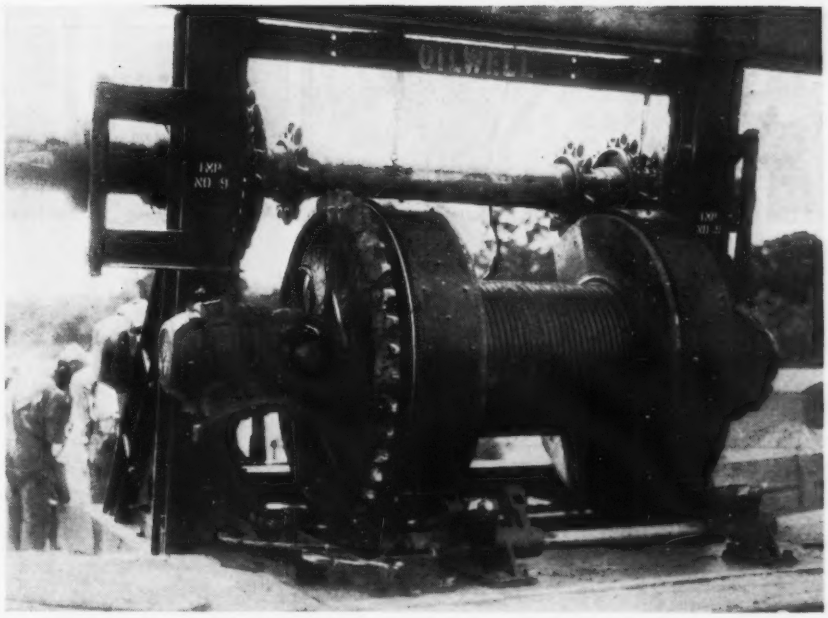
GENUINE PUDDLED WROUGHT IRON
READING PIPE
DIAMETERS RANGING FROM 1/8 TO 20 INCHES

Science and Invention Have Never Found a Satisfactory Substitute for Genuine Puddled Wrought Iron

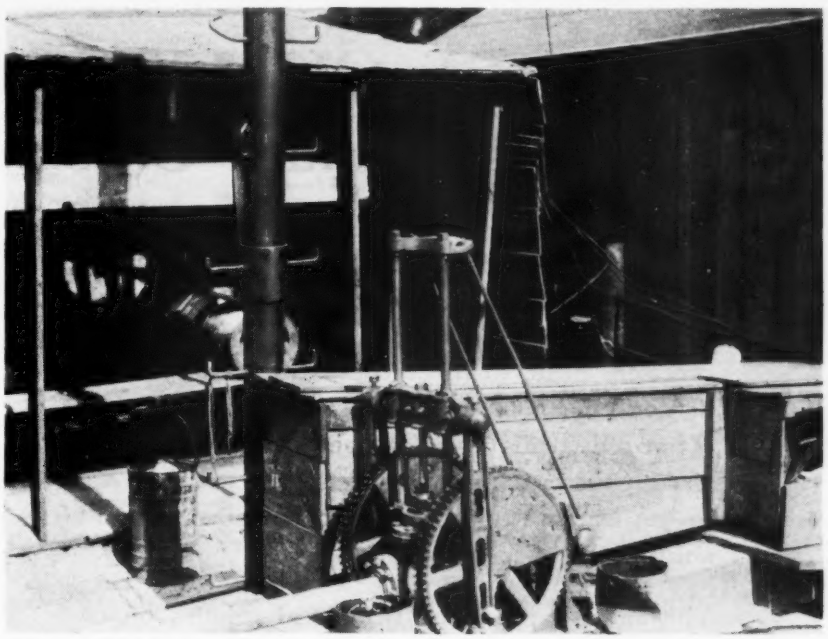
ever, is the modern derrick. It is so far removed from the hand hewn oak rigs of earlier days that in general outline only is there any resemblance.

Aside from its increased size, weight and load capacity, the greatest improvement in the steel derrick has been in the materials used in its construction. Special alloys and carbon steel permit the heights to which they are built, and make possible their wide safety factors above the requirements of modern drilling conditions. Their bracing is as near perfection as engineering ingenuity can make it.

The first steel derrick to be erected in the Mid-Continent furnishes an amusing contrast to practice today. Yet any oil man can look with respect on this achievement of producers



Installing one of the large draw works needed in drilling deep wells at Oklahoma City. Note the size of the brake drums and the character of the bearings



This small pump supplies all the water needed for drilling with electricity in the Oklahoma City field. The pump makes 400 barrels per day from a well 900 feet deep

of 20 years ago. It was built in 1908 by C. A. Reading, of the L. C. Moore Derrick Co., near Kiefer, Okla. With a 20-foot base and a 5-foot top, the rig was 74 feet high. These proportions are not much out of line with the present. It was made of 2-inch tubing and pulled into an upright position after being laid out on the ground.

The clamps used in holding the various parts together were almost identical to those used in derricks today. In strength and general durability it was the equal of latter designs for 2500-foot holes. Its record of 50 some wells drilled offers proof of this statement, and it has not yet finished its useful life. It is still standing in the field where it was first erected.

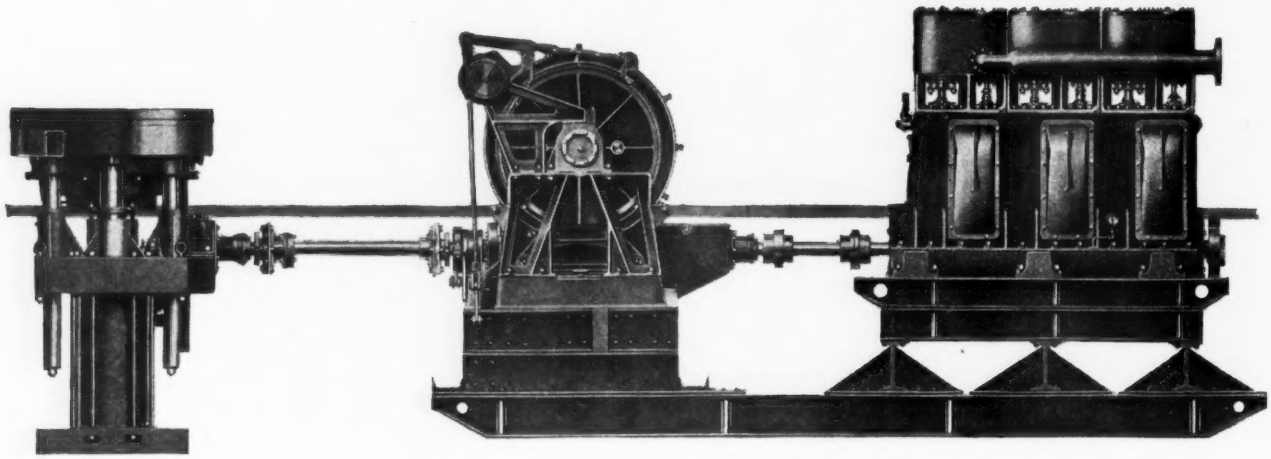
Pipe line men of the early days will find much to interest them in late developments in their particular phase of the industry. Those old-timers who remember the war of the 70's between the barrels truckers and the pipe liners back in Pennsylvania have probably turned the corner. There will be, however, a number of men who will remember the backaching days of hand ditching, "big inch" tongs, and muscle bending.

The modern ditching, threading, laying, and back filling machines will impress on them the comparative ease with which present long lines are laid. Welded lines are a recent development and the methods of laying them will probably leave the hardened pipe liner cold. In the modern power units of present lines, however, he will have a great deal of interest. The advance in engines and pumps has been a continuous performance until now they have capabilities and capacities far in excess of even present great needs.

This is also true of the gas and gasoline engines which supplanted the old type steam engines in the booster plants. The electric motor is also being used in the pump stations. Of the pumps, both reciprocating and centrifugal, there is little about the late designs for the old-timer to recognize, outside the principle.

It remains for the old driller to have a really good time as he scans, at the exposition, the advances in his particular field. Regardless of how competent the younger generation may appear to be, its predecessors on

HYDRIL



Complete HYDRIL equipment includes Hydraulic Rotary Table, 6-speed Drawworks, 3-cylinder Steam Engine, and Flush Joint Drill Pipe, operated where required through HYDRIL gas control. HYDRIL operates equally well with steam, gasoline or Diesel engine, or electric motor. All drive shafts run under derrick floor, providing more than usual free working space.

HIGHEST QUALITY
Lowest Ultimate Cost

Buying HYDRIL equipment on the cost-per-well basis shows it to be the most economical equipment on the market. HYDRIL is so durably and precisely built to meet the extraordinary service demanded by today's deep well operations that it not only drills straight, deep wells in the fastest time, thus cutting labor costs, but with the very lowest expense for repairs and the elimination of shutdowns.

The savings made in time and repairs on one well, more than offset the difference in cost of HYDRIL equipment. HYDRIL is proportioned with maximum strength to minimum weight, and is made with the scientific exactness of the finest highest priced automobile. Electric steel castings are used throughout, with Timken bearings and alloy steel shaft drives. All parts machined to close tolerances, and critically inspected to make HYDRIL the most perfect example of modern drilling equipment.

HYDRIL

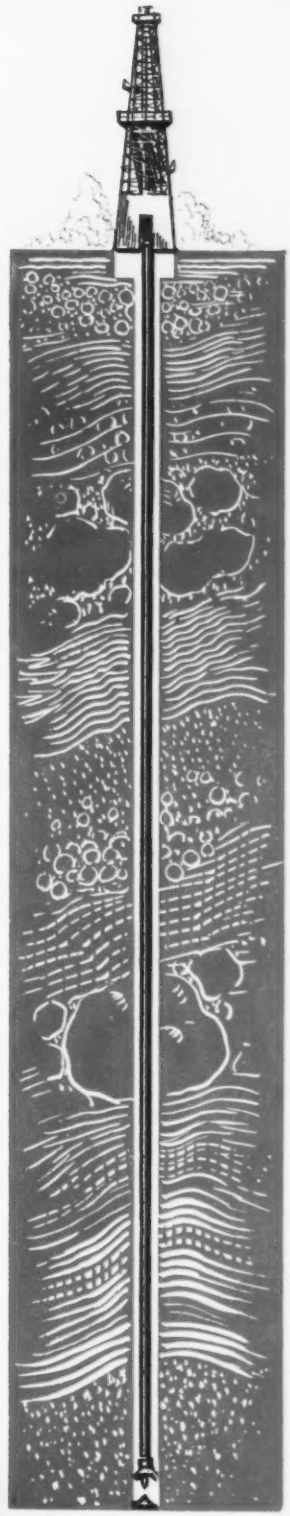
MAKES NEW RECORD!

« « « This Time in the NEW HOBBS FIELD

Reports of another great drilling record made this year come from Hobbs Field, New Mexico. Hobson and King, with HYDRIL equipment, made 4,219 feet in 18½ days drilling time, which is the fastest record made in the Hobbs Field, in competition with almost every other make of drilling equipment.

Again and again, in widely separated fields, HYDRIL has shown that its principle of positive, accurate control of bit pressures solves the problem of drilling straight holes through any formation. HYDRIL is famous in the industry for having the lowest accident hazard and requiring a minimum of repairs even under the most rigorous conditions of modern deep well drilling.

In new fields at home or abroad where conditions are difficult and practically unknown, and where drilling straight holes in the shortest time at minimum cost is absolutely imperaative, HYDRIL is the most dependable and economical drilling equipment for the job.

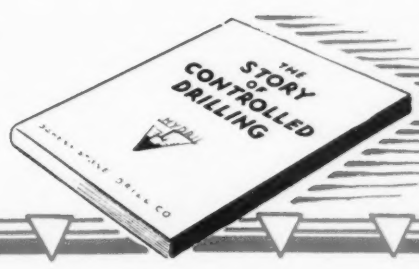


DOHENY STONE DRILL COMPANY

714 West Tenth Street . . . Los Angeles, California

Cable Address . . . Hydril, Los Angeles

Send for Your FREE copy of this Valuable Book.



The "Plumb-Bob" principle drills holes vertically straight in shortest time and with minimum expense and trouble.

WHATEVER type of CRACKING UNIT you use,
you can now, by Direct Connected
VAPOR PHASE REFINING

DISCARD - Acid Treating

ELIMINATE - Rerunning

PREVENT - Processing Losses

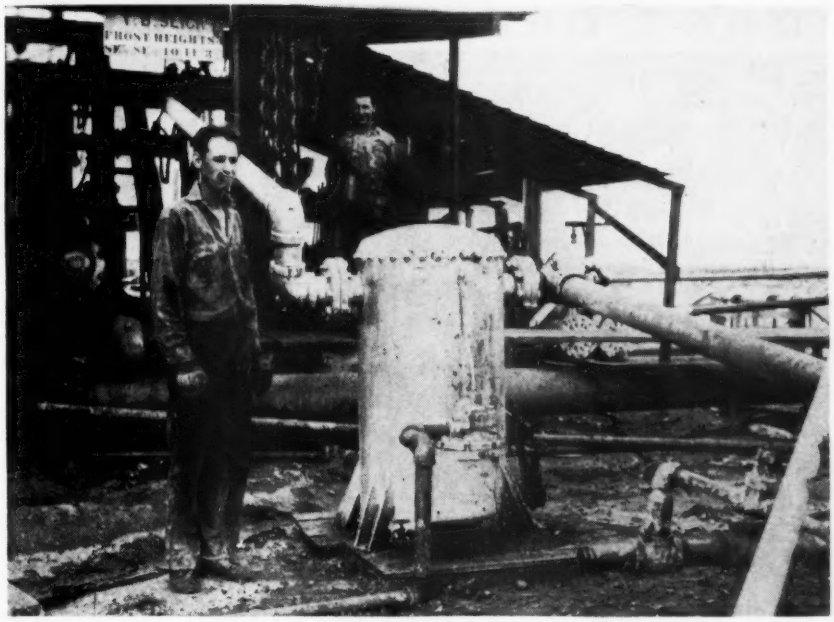
CONSERVE - Antiknock Values

and

OBTAIN A STABLE, COLORLESS,
NON-GUMMING MOTOR FUEL

AT ASTONISHINGLY LOW COST

THE GRAY PROCESSES CORPORATION
961-975 FRELINGHUYSEN AVENUE
NEWARK, NEW JERSEY



Small separator used for extracting free water from steam before it enters the drilling engine. A number of these devices are in use in the Oklahoma City pool

heavier demands on boilers, and not only are more of them used in one hook-up, but they were individually more powerful. The 25 to 50-horsepower boilers of "the good old days" have been supplanted by units which develop 125. Working pressures are now above 300 pounds, and the superheat boilers now commonly used can make more steam with less water than any of the earlier types.

The old cable tool driller, who formerly hooked his walking beam direct to the flywheel of his engine, will appreciate the speeds attained by the present power units. The early models of his engine were often a part of the boiler itself and located where the dome usually is. Its motion was so slow that any form of reduction gear was unnecessary, yet it sufficed to start the oil industry toward more prosperous days.

It will make little difference what the age of the visitor at the exposition is, if he is interested in progress. Advancement in any industry is worth more than just a casual glance, especially if based on scientific research. This will be the case in every exhibit of the exposition.

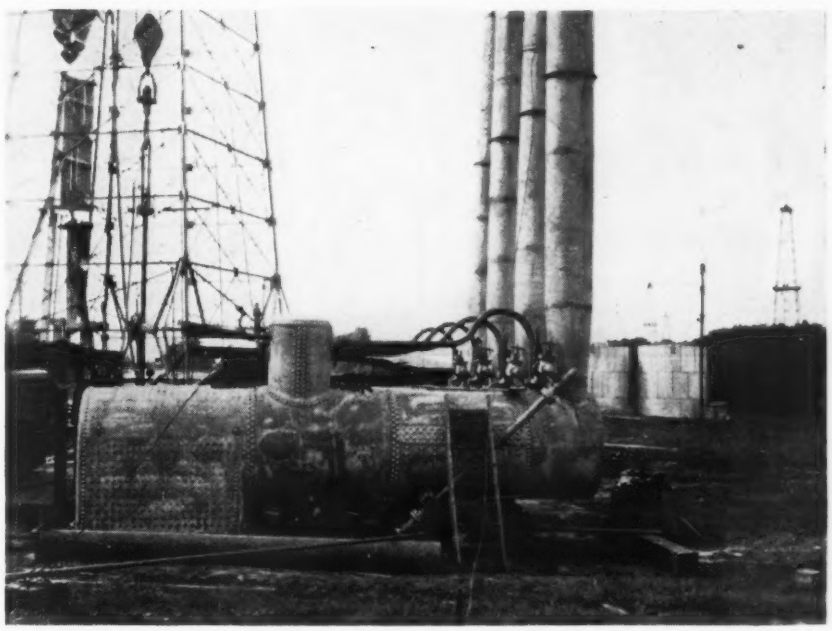
the rig floor will ridicule its abilities. The accompanying illustration of a present day rotary driller, sitting at ease while the hole goes down, will probably be one cause for criticism.

There were no automatic gadgets on the earlier rigs. In fact, the number of gadgets of any kind were limited. Those few that did exist were the ingenious inventions of the crew themselves. The rotary driller of those days had to have an educated "feel" for his tools. So does the modern one, for that matter, but it would be difficult to convince his critics that he should not be ashamed to draw his pay.

The machinery of the rotary, draw works, pumps and boilers, retains much of its original shape but that is about as far as the resemblance to former models goes. The old bronze bearings have long since been discarded for roller and ball, and the draw works speeds have been almost trebled. Drum, line, and jack shafts are now 9-inch, 8-inch and 7½-inch respectively, instead of the old 6-inch maximum diameters. These changes have meant an increase in weight, so that now the latest designs tip the scales at over 30,000 pounds.

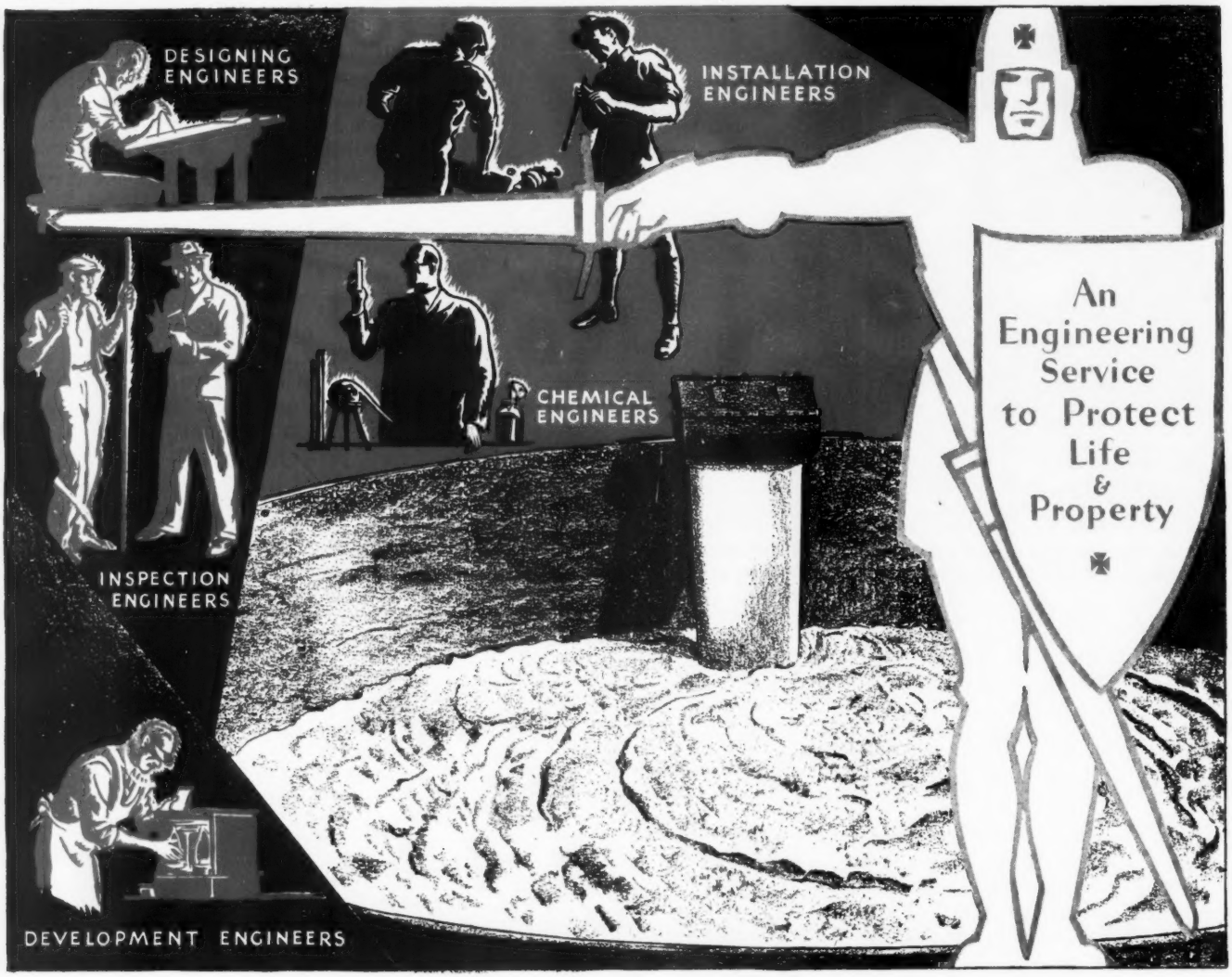
The same is true of swivels and pumps. A slush pump with the unusual dimensions of 15 x 7¾ x 20 has recently come on the market to dwarf all the other models. It is capable of handling more fluid than a pair of those used in early rotary drilling. Swivels, too, have grown to more than treble their former size, and have gained in efficiency in the process. Working loads have been increased from 90 to 150 tons, as weights moved from 2150 to 6525 pounds.

Increased drilling depths put



Hook-up of superheat boilers in the Oklahoma City field. Each boiler is equipped with two pop-offs, one just forward of the stack and the other in the usual place in the dome. The former is to prevent the burning out of the super-heat tubes when the well is temporarily shut down

FIRE — AN INCIDENT OR A DISASTER ?



Five specialized groups make the FOAMITE System UNFAILING . . .

The FOAMITE Two-Solution System has never failed to extinguish a tank of burning oil—*because* it is the time-tested, practical achievement of five groups of engineers, whose technical training is wholly applied to this one highly specialized field.

These engineering groups comprise:

Designing Engineers for the correct design of each element in the System and the proper proportioning and coordination of all parts of the System.

Installation Engineers for supervising correct installation.

Inspection Engineers assuring correct maintenance.

Chemical Engineers for the periodic analysis of chemical solutions in storage.

Development Engineers for keeping the System abreast of the latest developments in FOAMITE Protection.

This complete service is the reason for the success of FOAMITE Systems—today safeguarding over 90,000,000 barrels of oil.

Why not have a representative survey your hazards and present recommendations—without obligation. *Representatives near all principal oil producing and refining centers.* Write

AMERICAN-LA FRANCE AND FOAMITE CORPORATION, DEPT. E45, ELMIRA, N. Y.

LA FRANCE AND FOAMITE PROTECTION

AN ENGINEERING SERVICE

AGAINST FIRE

You are cordially invited to visit the La France and Foamite booths, Nos. 95 and 96 in the Texas Building, at the 7th International Petroleum Exposition and Congress, Tulsa, Oct. 4th to 11th.

What Exhibitors Will Show

AMERICAN Sand-Banum Co., Calif, 43, Sand-Banum boiler compound, mechanical action, package in pint containers for one month's treatment of 250-horsepower boiler.

* * *

American Cable Co., Texas 97,98, complete samples of company's products including Try-Lay preformed cable and Tru-Loc process fittings; and section of large bridge cable.

* * *

The American Brass Co., Okla. 108, 109, full line of copper, brass bronze, nickel silver, and special copper alloys in all form of sheets, rods, wire, tubes, die-pressed parts, extruded shapes, etc., oxy-acetylene welding with Tobin bronze filler rods; Anaconda condenser tubes and Everdur metal.

* * *

American Fomon Co., Okla. 44,45, complete line of fire equipment for industry featuring portable generators and foam towers for the protection of 55,000 and 80,000-barrel oil storage tanks.

* * *

Armstrong Machine Works, Texas 125 a glass bodied steam trap operating at five pounds steam pressure; forged steel traps for high pressure and high temperature duty; gasoline traps for standard and hydrogen sulfide resisting service; and a piston operated trap for extreme high pressure and high capacity jobs. George B. Allan, Texas and Oklahoma representative, and T. H. Rea, sales manager, in charge.

* * *

American-LaFrance & Foamite Corp., Texas 95, 96, complete line of fire-fighting equipment including Foamite extinguishers, 40-gallon Foamite engines, Foamite tanks for motor fire apparatus, several different sizes of Foamite generators for continuous streams, soda-acid hand extinguishers, engines, tanks, seyeral sizes of carbon tetrachloride fire guns, fire hose, LaFrance electric lanterns, shut-off nozzles of various types, gas masks, inhalators, respirators and other miscellaneous equipment.

* * *

The American Rolling Mill Co., Okla. 114, 115, complete display of Armco spiral welded pipe, and photographs of actual installations of sheets and plates in the oil and gas industries. Booth will be shared with the Sheffield Steel Corp., a separate operating unit of American Rolling Mills Co.

* * *

The Allsteel Products Mfg. Co., Lot F, the following Cardwell Allsteel equipment; new Model 60 pipeline and industrial winch, new Model 20 backfiller and industrial hoist, Model 20 core drill slush pump, Model ST-60 oil field winch, Model SA-30 oil field winch, Model FA-15 oil field winch. Units will be mounted on Caterpillar tractors. Representatives are H. W. Cardwell, president; H. R. Laudermilk, vice-president; L. R. Austin, sales manager; William Guier, chief engineer; and Harley Reece, service representative.

* * *

Appleton Electric Co., Refiners & Marketers 61, 62, threaded and no-thread malleable unilets, complete line of electrical conduit fittings, and portable and constant duty Reelites.

BARBER-GREENE Co., Lot H, introducing two new ditch digging machines, the light utility ditcher, with a vertical offsetting boom, applicable chiefly to cutting gas lines and services, and the service special ditcher, a minature of the standard B-G vertical boom ditcher, designed for gas line and conduit work. In addition there will be the 1930 model of the pipeline special ditcher. Attending H. H. Barber, president; W. B. Greene, vice-president; J. M. Bruns, ditcher division head; and E. H. Cooper, manager Kansas City office.

* * *

Ralph N. Brodie Co., Refiners & Marketers 42, displacement meters for ship loading terminals, bulk plants, truck tanks, pipelines and refineries; Model X displacement meter for gasoline dispensing pumps; accessory lines as strainers, air release valves, and specially designed vertical counters. Attending Ralph N. Brodie, Walter W. Brown, Jack Walton, and William M. Rankin.

* * *

The Bristol Co., Scientific & Technical 1, 2, new device for automatic control of air-gas lift plants through motor operated diaphragm valves; new type of electric pyrometric control for cracking stills; line of industrial thermometers, air operated control equipment, recording pressure gauges and thermometers. Attending H. L. Criggs, general sales manager; J. B. Kelsey, assistant sales manager; H. T. Weeks, T. F. Herring, L. E. Mustard, and J. L. Hodgkinson.

* * *

Braden Steel Corp., Okla. 35, samples of various parts with photographs and literature of company's standard all-steel sectional buildings and loading racks for oil fields. Office and plant in Tulsa also open to visitors.

The Borden Co., Okla. 84, entire line of Beaver tools for pipe cutting and several new Beaver products.

* * *

The Brown Instrument Co., Scientific & Technical 39, 40, instrument equipment for production and refining, the new Brown 801 automatic control indicator, the Brown automatic controls, Brown "Trend Analyzing" control recorder, flow meters, liquid level gauges, pyrometers, thermometers, pressure and vacuum gauges, tachometers, and CO_2 meters. In attendance F. M. Poole, district manager; George W. Keller, vice-president and general sales manager; and G. S. Younkin, J. V. Mannion, and R. W. Groendycke.

* * *

The Buda Co., Okla. 67, 68, 69 ,70, Model H-199, four-cylinder gasoline engine; Model FR power unit gasoline engine; model JH-4, power unit gasoline engine; Diesel model D4-23 model DM6-30. R. K. Mangan, sales manager of industrial division, in charge.

* * *

Buckeye Iron & Brass Works, Calif. 22, mounted displays of foot valves, fill boxes, hose nozzles, hose nozzle valves, foot valve extractor fittings, gate valves, and other valves used in service station installations; many displays will be cut-away. H. W. Webb, sales manager, in charge, assisted by George R. Bardsley.

* * *

Botfield Refractories Co., Refiners & Marketers 57, its line of refractory cements and materials and use and application of these products. Company will be assisted at booth by the Marshall Supply Co., its Tulsa distributor.

* * *

Barco Mfg. Co., Refiners & Marketers 8, first showing of Barco lubricated service and curb cocks, for underground gas service; and the line of Barco lubricated plug valves and Barco flexible joints.

* * *

The Baash-Ross Tool Co., Calif. 41, 42, introducing new field equipment of combination blowout preventer and tubing head safety joints, rake tooth bits, and mud screens. Will exhibit and demonstrate full line of equipment. In attendance L. J. Baash, president; Erwin Burns, assistant general manager; H. H. Clark, vice-president; R. T. Watkins, head office sales; A. V. Cox, Oklahoma City shop; George Dewdney, manager Oklahoma City shops; C. E. Lewis, Perry Pond, and Eugene Turner, of Oklahoma City sales department.

* * *

Bethlehem Steel Co., Texas 130, 131, 132, 133, Bethlehem pipe in various

If we bent all our efforts to make gasoline to suit the automobile engine instead of people's whims and notions, everybody would be better off

The engine is always right — people's whims and notions are often wrong

That's the way it is with color in gasoline It is people who do all the kicking You never hear the engine complain about it

Color certainly makes no difference to the engine, yet

look what it costs refiners to meet this color fad

Volatility and knock rating —that's all the engine cares about Dubbs cracked gasoline has it

Dubbs cracking means profits to the refiner, because he can make this good gasoline from cheapest charging stock at lowest cost

Universal Oil Products Co
Chicago, Illinois

Dubbs Cracking Process
Owner and Licensor

What Exhibitors Will Show at Tulsa

sizes, alloy steels, corrosion resisting steels, tool steels, special forgings, corrugated galvanized sheets, bolts and nuts, oil burning equipment, illustrations of forged steel drums for oil refiners and photographic transparencies showing views of Bethlehem's plant.

* * *

Baker Oil Tools, Inc., Okla. 98, 113, full line of Baker oil field equipment including Baker cement equipment, drill pipe float, Baker rotary core barrel, Baker cable tool core barrel, Baker combination drilling valve, and blowout preventer. In attendance will be R. C. Baker, president; A. T. Borst, vice-president; T. Sutter, sales manager, and all Mid-Continent and Texas salesmen.

* * *

Broderick & Bascome Rope Co., Okla, 83, 128, revolving display showing examples of wire rope and an exhibit of short samples of various constructions of rope interesting to oil men.

* * *

Bailey Meter Co., Scientific & Technical 57, a boiler control panel equipped with Bailey boiler meter for indicating, recording and integrating the steam flow, to record air flow for combustion, and to record flue gas temperatures leaving the heating surfaces; the Bailey fluid meter to measure steam to a turbine or a measure feed water; a Bailey multi-pointer gage to indicate the secondary factors in boiler unit control; and a long distance liquid level indicator for indicating height of oil in storage tanks or boiler water levels. A Bailey electrically operated fluid meter and a Bailey thermo-hydraulic feed water regulator will be exhibited. C. E. Albert, Kansas City manager and C. M. Kunkel, Houston manager, will attend.

* * *

The Big Three Welding & Equipment Co., Outside, two new series of arc welders by the Lincoln Electric Co. for pipe line welding. Equipment, which is larger than any manufactured now, will be in actual operation with Lincoln's new Fleetweld electrode.

CHICAGO BRIDGE & IRON WORKS, Texas 80, 81, the Hortonspheroid, a new type pressure storage tank with capacities of 2500 to 20,000 barrels, working pressure of 10 to 15 pounds, for storing casinghead and other volatile gasolines; and the Wiggins Breather roof. The company will take visitors to see actual Wiggins roof installation at the automatic pipeline pumping station on grounds.

* * *

The Cooper-Bessemer Corp., Lot G, four units developed and introduced in past year, type GA pumping and drilling engine, with Timken main roller bearings, die-forged crank shaft, and improved air valve; Type-14 vertical gas engine, die-forged crank shaft, drop forged connecting rod, silent roller chain driven cam shaft, and separate mixing valve for each cylinder; new line of compressor cylinders in six sizes ranging from 5 to 20 inches in diameter; and a heavy type reverse clutch for pumping and drilling engines equipped with 5-inch shaft.

* * *

California Talc Co., Outside, a miniature oil derrick with mud circulating system to show basic characteristics of different muds treated with Aquagel, a colloidal compound for rotary mud; and laboratory equipment demonstrating treatment of rotary mud.

* * *

The Cameron Tool & Supply Co., Okla. 58, newer tools will be the Monroe jar down slip socket and the Cameron safety casing drive ring; the Monroe spiral torpedo drilling bit, the Akins underdriller bit, the Talon Line rope grabs, spears, and Talon friction sockets. F. B. Dillaman and L. D. Rees in charge.

* * *

Columbian Steel Tank Co., Lot M, the Pioneer, a new 1000-gallon frameless semi-trailer truck tank, a sectional view exhibit of a 100-barrel A.P.I. bolted steel tank with Columbian deck and bottom and the new Leakproof nut, an airplane refueler, and other items including drums, cans, funnels for the marketer.

* * *

Coffing Hoist Co., Calif. 2, following small hoists Model A, ¾-ton, weight 13 pounds; Model F 1½-ton, weight 25 pounds; Model F-S 3-ton, weight 36 pounds; and Model Z 6-ton, weight 65 pounds.

* * *

Continental Supply Co., inside display of miniature pipe mill of Youngstown Sheet & Tube Co. in complete operation. Westcott Valve Co., Grinnell Co., D & B Pump & Supply Co., Mechanical Rubber Co., Goodall Semi-Metallic Hose & Mfg. Co., Tnemec Paint Co., and the New Bedford Cordage Co. will show their newest and latest design of materials. Outside exhibit consists of Emsco Derrick & Equipment Co.'s. electric rotary drilling outfit complete with GE motors and the new Gardner-Denver steam pumps and power pump and drilling engine. Fairbanks, Morse & Co. will have in operation both Diesel engines and twin cylinder gas engines. Farrar & Trefts will show the new superheated boilers.

The C. Lee Cook Mfg. Co., Calif. 45, full line of Cook's Graphitic iron metallic rod packings and piston rings; the Cooktite sealing ring for holding the cylinder pressures in Diesel and gas engines; and improved rod packings for higher pressures in air and gas lift service and in the pumping of natural gas.

* * *

Clark Bros. Co., Lot A, the 85-horsepower vertical gas or gasoline driven units; and the new eight cylinder, vertical, four cycle, 240 B.H.P. engine used for operating a generator, or hooked up through a flexible coupling to a Clark reversible clutch for drilling purposes, and might be used for rotary drilling.

* * *

Fred E. Cooper, Lot B, the OilPull winch tractor, the OilPull stationary winch, the new Rumely Do All industrial winch tractor, and the Rumely Do All stationary winch.

* * *

Cities Service Oil Co., Refiners & Marketers 38, a mountain side in the background has an illuminated continuous stream of oil flowing into a sump, a road comes out of the mountain to a modern Cities Service service station with automobiles on a small track driving in for gasoline and oil. Oil wells will be on the mountain side. Oil paintings of fields, and refineries will be in the background. C. A. Willis, general sales manager Cities Service; O. J. Tuttle, sales manager, Empire Oil & Refining Co.; Charles Self, Cities Service division manager; R. J. Daugherty, director of public relations, Empire Companies, will attend.

* * *

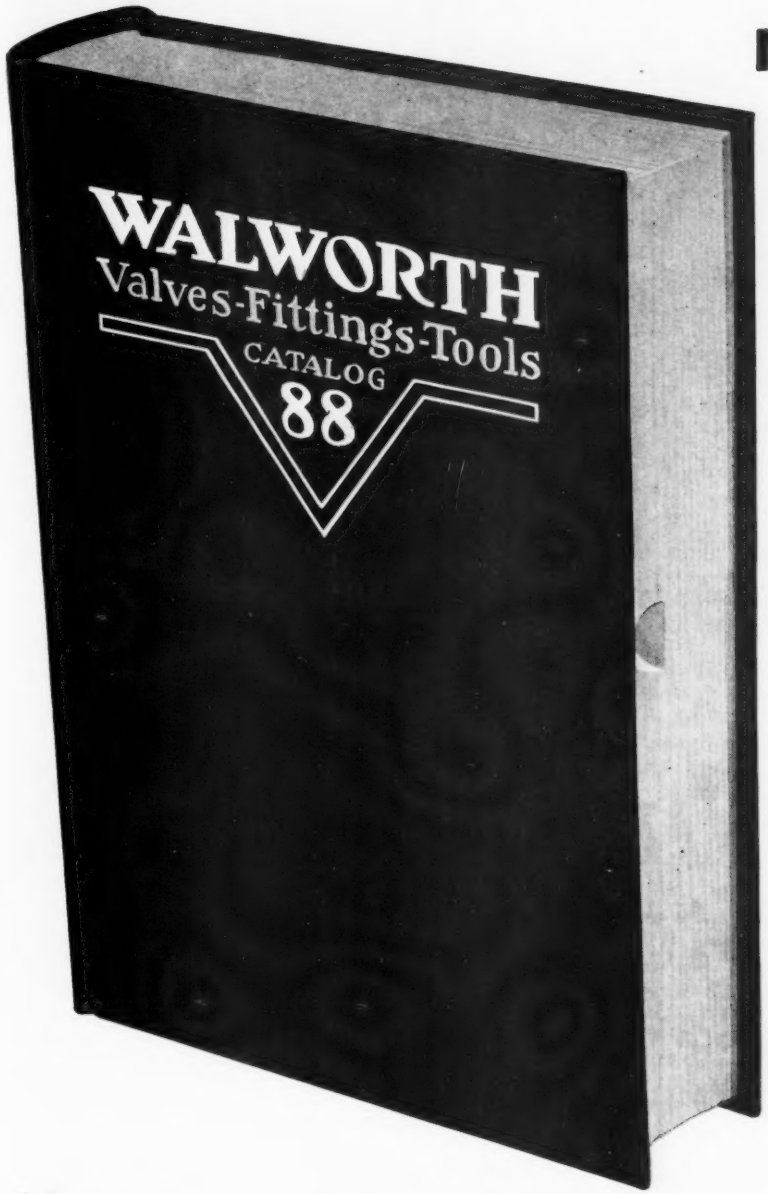
Clark Machine Co., Outside, the improved model 61 Wichita Falls spudder built for practical drilling to 4000 feet and cleaning out deeper wells. The drilling drum spools 8000 feet of three-quarter inch line. The spudder is designed to handle the same tools as a standard rig.

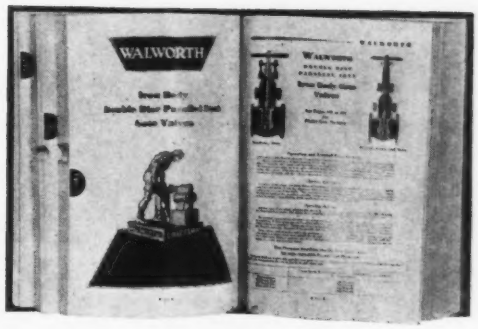
* * *

The Chain Belt Co., Texas 8, 9, the Rex Chabelco chain for oil fields. Outside will be display of part of company's line of water pumps and concrete mixers for oil fields. In attendance Brinton Welser, secretary; A. R. Abelt, manager chain and transmission division; M. G. Jewett, engineer; C. F. Messinger, vice-president; John Smallshaw, St. Louis office; H. S. Greene, assistant to president.

DRIFTMETER, Inc., Scientific & Technical 63, the Driftmeter, and Driftmeter Junior, for measuring angle of deflection in crooked

Your new Walworth Catalog is ready to mail





Oil, water and gas pressure ratings given for every item

Here is complete information for the oil industry about such important equipment as: Walworth Sigma Steel, Drilling Gates, Line Valves and Refinery Valves, Gas Line Valves, Kewanee Unions and Flange Unions, Refinery Malleables, Iron Body Gates and Globe Valves, Bronze Valves, C.N.I. (Chrome-Nickel-Iron) Cast Pipe, Walco Wrenches etc., etc. The book includes many pages of valuable engineering data, making it a complete and authoritative handbook for the oil engineer.

HERE'S a volume you should adopt as your handbook of valve and fittings information. This new Walworth Catalog 88, just off the press, is the most comprehensive catalog and reference book ever published for the oil industry. It lists, describes and illustrates everything that Walworth makes, and gives full specifications as to size, pressure-rating and price of every item in the complete line made in the five great Walworth factories. We shall be glad to send you a copy by return mail, with our compliments.

Send for your copy TODAY

WALWORTH COMPANY
Catalog Department
60 East 42nd Street, New York City

Please send me a copy of the new Walworth Catalog 88.

Name .....

Title or Position .....

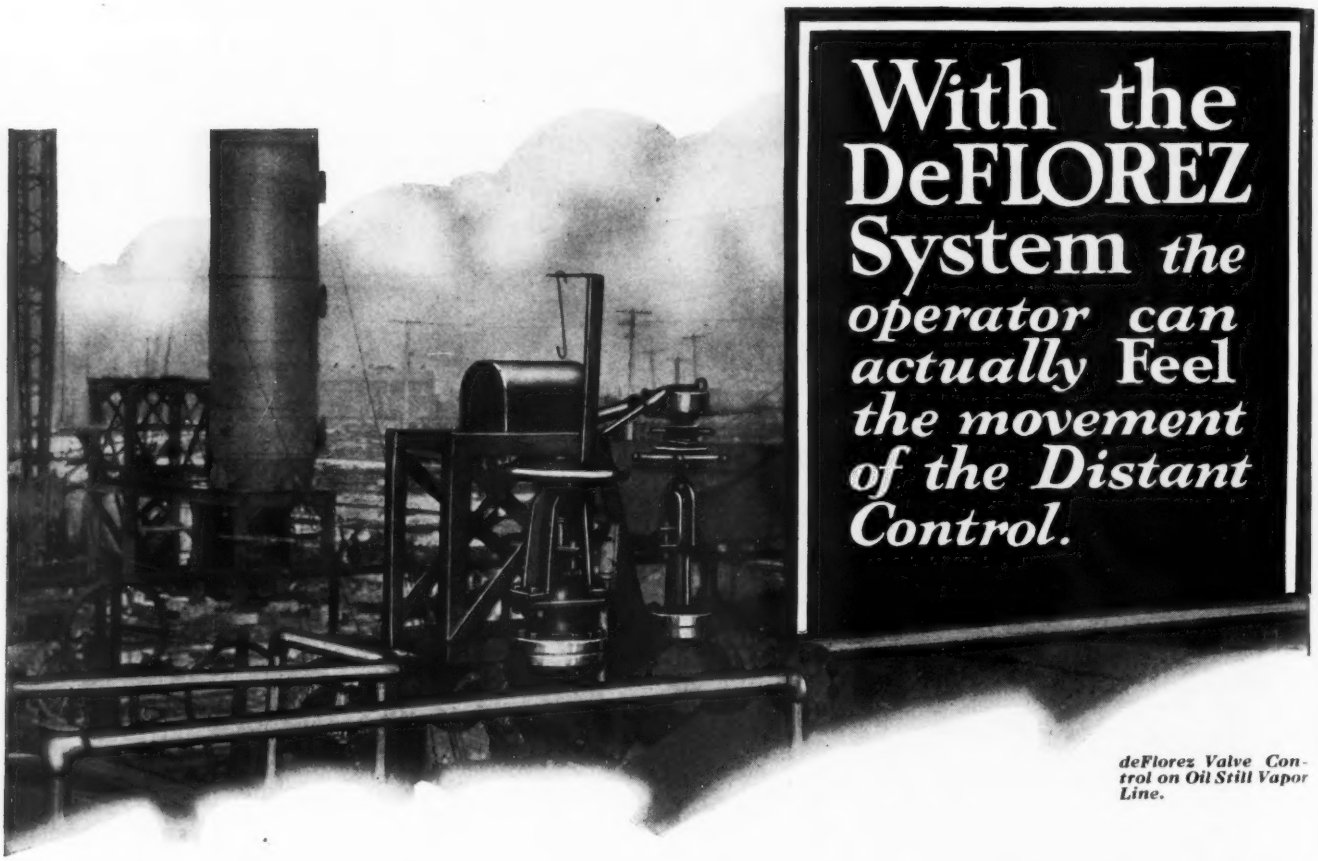
Company .....

Address .....

..... State .....

WALWORTH

Walworth Company, General Sales Offices: 60 East 42nd St., New York Plants at Boston Mass.; Kewanee, Ill.; Greensburg, Pa.; and Attala, Ala.



With the DeFLOREZ System *the operator can actually* Feel *the movement of the Distant Control.*

deFlorez Valve Control on Oil Still Vapor Line.

Adds the *human touch* to remote Control.

—so necessary in oil refinery operation!

Some refinery controls *must* have the human touch—must be *manually* operated. Mighty difficult, too, where the mechanisms to be operated are distant from the control room. Now comes the deFlorez Remote Manual Control to solve this problem. Provides manual operation without mechanical transmission. Write for Bulletin No. 7520.

THE BROWN INSTRUMENT COMPANY
4508 Wayne Ave., Philadelphia, Pa.
Branches in 20 principal cities

Brown Instruments

"to measure is to economize"

What Exhibitors Will Show at Tulsa

holes by a perforated needle on the end of a pendulum being dropped on a paper with concentric circles, the needle being dropped when the desired depth is reached through an electric current.

* * *

Dearborn Chemical Co., Texas 105, advertising and small tubes and cans of samples of various commodities with few short lengths of pipe carrying pipe-line coatings, No-Ox-Id, gray cloth and asbestos wrapper, and master service coat.

* * *

De Walt Products Corp., Lot F, high speed sawing equipment for wood, metal, or stone, the same machine handling all products, it is portable, and may be tilted to the various cutting positions.

* * *

Dover Stampings & Mfg. Co., Refiners & Marketers 26, 27, line of super-service, filling station, and tank wagon supplies for marketers including measures, funnels, safety gasoline cans, Drain-O-Kans, gasoline price signs, battery bottles, oily waste cans.

* * *

The Duriron Co., Texas 99, general line of Duriron acid-proof equipment consisting of centrifugal pumps, pipe fittings, valve, mixing nozzles, elbow jets, as well as Durimet acid-proof sheet, bars and Nirosta non-corrosive material.

ERIE Meter Systems, Inc., Lot R, line of Erie gasoline meter pumps in standard and displacement types, single and double dial meters, tandem models, and new airport fueling systems.

* * *

The Eagle-Picher Lead Co., Texas 49, 50, Eagle line of bearing metals, patented lead wool oilwell plugs, chemical sheet lead and lead pipe, oil refining litharge, white lead oil and paint, sublime blue lead and oil paint, red lead and oil paint, leadhead nails, lead roofing washers, chemical rod lead or burning bar, "66" insulating cement, pipe insulation, blanket insulation, rope socket material; and miniature bubble tower and oil field boiler insulated with three Eagle materials.

* * *

The Electric Controller & Mfg. Co., Calif. 51, complete line of oil-immersed motor starting equipment, consisting of Type ZO across-the-line starting switch for small AC motors, low and high voltage automatic compensators, and the new Type ZHS 2300 volt magnetic contactor for full voltage starting of squirrel cage and synchronous motors.

E. H. Edwards & Co., Texas 25, mystery display to see your voice and have your character read with high grade, finely drawn wire playing important role in this device as in oil field drilling lines Hinderliter Tool Co. is Mid-Continent distributor.

FORT Worth Well Machinery & Supply Co., Outside, working model of Model J Fort Worth spudder with new improvement; and a super H Fort Worth spudder.

* * *

The France Packing Co., Okla. 101, metallic packings for all service, particularly for gas engines, compressors, and slush pumps; semi-metallic packing, gaskets, and sheet packing. A. W. France, president, in charge assisted by oil field representatives.

* * *

The Fisher Governor Co., Texas 102, 109, with subsidiary Apex Regulator Co. Exhibiting devices such as series 2200 master control unit, the new Apex liquid level controller, the Apex class AA reducing valve, and the Fisher liquefied petroleum gas reducing valve, the new Fisher ball bearing equipped float cage, and about 50 other automatic specialties.

* * *

Fusion Welding Corp., Arcade 6, 7, 8, demonstration of new welding applications: the new Weldite welding rods for both gas and metallic arc welding and pipelines and in refineries; the Fuzon line of arc welding generators, the oil field models include portable models for towing behind auto and truck; and a complete line of Fuzon welding accessories and supplies. In attendance M. P. Hare, Dallas, southwestern district manager; T. V. Burns, Houston, sales engineer; Clyde Rackley, Tulsa sales engineer; L. F. Collins, Chicago, general sales manager; and R. F. Beazell, Chicago, sales promotion.

* * *

The Ferro Machine & Foundry Co., Refiners & Marketers 33, demonstrations of various Ferro models of gasoline pumping units. Model 1200-1 driven by 1/3-horsepower motor, through flexible coupling with a built-in by-pass and strainer. Model 1200-26 a 35-gallon per minute pump with totally enclosed gear reduction, this pump is used in refueling airplanes. Model 1200-14 remote control pumping unit with capacity of 20 gallons per minute directly connected with built-in by-pass and a one-horsepower motor.

* * *

Foxboro Co., Scientific & Technical 3, 4, 5, new refinery pressure gauge, featuring a steel Bourdon spring and hardened steel working parts, and claimed not to give way in case of fire; the new heavy forged steel orifice meters for measuring flow of fluids under pressures up to 2500 and 5000 pounds per square inch; the flow ratio controller; a differentia limit controller; and the usual line of instruments for controlling, recording and indicating temperatures, pressures and flows.

* * *

The Federal Malleable Co., Texas 6, 7, 8, 9, display of malleable oil field castings. Kurt Siemens, sales manager, in charge.

GOODRICH Electric Co., Refiners & Marketers 41, the new No-Kon-Bend angle reflector; porcelain enameled reflectors; vapor-proof fixtures; No-Kon-Bend sign lighting reflectors; floodlights for outdoors; weatherproof lighting fixtures; and office lighting fixtures. In attendance W. J. Goodrich and A. H. Hardy.

* * *

The Griscom-Russell Co., Okla. 42, 43, new G-R Equaflo exchanger designed without cross baffles in the shells, and the tubes so spaced in the shell that the area of flow through the shell may be equal to the area of flow through the tubes; applicable for heat exchange between two liquids of approximately the same quantities, and where conditions permit as a condenser or cooler.

* * *

General Motors Trucking Co., Lot J, a T-82 tractor with 2000-gallon semi-trailer pulling a four wheel trailer with an additional 2000 gallon load; model T-25 installed with a Shrader Electric Co. welder used in pipeline work; a model T-60 chassis with Mead-Morrison winch and a special Pure Oil body; model T-44 for pipeline or open road work, and several factory built bodies and chassis of smaller capacities. E. P. Goodloe, Tulsa branch manager, in charge.

* * *

The Garlock Packing Co., Texas 59, complete line of metal and fibrous rod and plunger packings, asbestos and rubber sheet packings, fibrous and metallic gaskets, molded rubber and asbestos goods for all oil producing and refining requirements.

HALLIBURTON Oil Well Cementing Co., Lot D, latest type Halliburton cementing equipment consisting of 3½-ton oil field special F. W. D. truck, Halliburton measuring device, Halliburton cement mixer, and other Halliburton equipment. The

Meet us at Booth 12

MARK your calendar—now—for a call at Booth 12, Marketers' Building, International Petroleum Exposition. Shake hands with the originators of the metered gasoline pump. See what sixteen years' specialized experience has accomplished in providing money-making equipment, for keeping alert concerns at the front of a highly competitive industry. Get first-hand information on how to extract the last dollar of profit from your operations. We are here to help and serve you. A cordial welcome awaits you.

MILWAUKEE TANK WORKS

Pioneer Gasoline Meter Pump Mfrs.

Milwaukee, Wisconsin

U. S. A.

Make a note of the place:

BOOTH 12
MARKETERS' BLDG.

What Exhibitors Will Show at Tulsa

cement mixing pump will be of the Triplex plunger type rather than of the rotary type.

* * *

C. M. Heeter, Sons & Co., Okla. 13, packers of all types corrugated friction sockets, swabs, pipe grips, release couplings, steel casingheads, tool braces and a number of other products.

* * *

The Charles N. Hough Mfg. Co., Texas 84, the working barrels of various types; seamless steel working barrels; different types of liner working barrels including the Huf-Duo pump, Lewis plunger liner, two-cup inserted liner and Thompson pump; Hough extension lower valve; Protex upper valve and various types of working barrel valves made of bronze and steel; and the Hough brands of specialized balls and seats known to the trade as Steelex, Replex, Cominex and Bronzex. C. N. Hough, treasurer; O. J. Thompson, manager; C. O. Shumaker, Tulsa representative; and C. R. Brooks, Fort Worth representative, will attend.

* * *

Hills-McCanna Co., Texas 99, proportioning pumps for feeding sulphuric acid and other chemicals used in refining, the Young tank car bottom outlet valve, many types and sizes of Hills-McCanna thermometer and pyrometer protection tubes, Hills-McCanna force feed lubricators for individually or centrally controlled oiling systems, the Hills-McCanna liquid sampler for sampling tanks or tank cars from three levels, and other Hills-McCanna boiler room equipment such as low water alarms, fusible plugs, air cocks and alloy products. In attendance will be A. H. Noyes, president; F. R. Grassle, engineer; A. P. Wright, Houston; and E. A. Soph, Tulsa.

* * *

Hazard Wire Rope Co., Texas 28, samples of practically all types of rope manufactured for the oil fields, especially the Lay-Set special rotary drilling line for modern rotary equipment.

* * *

The Happy Belting Co., 72-75 Oklahoma Bldg., quarter size operating models of idlers and tighteners for the application of endless belts, to oil field operations. In addition to an automatic band wheel power idler and a No. 3 Vertical Tightener for beam wells the display will include the new "E-C" (engine to countershaft) permitting use of an endless belt where a countershaft is used.

INDEPENDENT Oil & Gas Co., Refiners & Marketers 18, 19, a display of the show window type of all Independent's products.

* * *

The International Derrick & Equipment Co., Outside, first showing of new type "B" drilling rig for fast drilling to meet the demand for a heavy duty rig in 3000-foot wells, the recommended capacity; first showing of new "super duty" two-post three-shaft four-speed draw works intended for drilling wells 12,000 feet and deeper; the new Ideco 6-inch Oilbath swivel, for extra heavy duty in deep well drilling; and the Ideco 27½-inch oil bath rotary, latest development of Boykin division intended for heaviest drilling service, and it is a straight rotary.

Those in attendance: Messrs. R. R. Bloss, C. G. Runkle, B. Boykin, Jr., F. W. Mohler, W. T. Hazel, J. L. Hamilton, F. Leidecker, S. B. Creamer, H. L. Wixfort, J. A. Tidball, C. M. Powell.

* * *

International Harvester Co., Outside a new model A-5, three-ton truck equipped with propeller shaft power take-off, Braden steel winch and oil field body; also an A-4 two-ton truck with propeller shaft take-off and rear winch for pulling rods and tubing; and the new AL-3 1½-ton truck equipped with 1000-gallon Columbian tank on semi-trailer. R. W. Elliott, local manager, and Messrs. Humbert, Leitenberger, and Adams, salesmen, will attend.

* * *

International Filter Co., Okla. 48, 49, three lines of Infilco products: the lime-oil feeder and mixer which automatically proportions hydrated lime and oil and forms a homogenous mixture for continuous feed to cracking stills to prevent corrosion; a cut-away model of the crystallite water softener for preventing scale formations in internal combustion engines, natural gasoline cooling plants and in steam boilers; and the steam purifiers and line type gas purifiers for removing moisture and dirt from steam and liquids from natural gas.

* * *

Ingersoll-Rand, Inc., Lot D, a 6-inch oil well will be pumped by the new Ingersoll-Rand Maxiflo gas and oil pumping device operated by a compressor, demonstrating the device as used in the field.

* * *

Iverson Tool Co., California 51, 52, the new Hamer seven joint all steel rotary hose, with seven flexible ball bearing joints each having a fluid channel larger than the 3½-inch drill pipe; the Hamer lubricated stop cocks, with Alemite fittings and a tension spring at the bottom; the Hamer E-Z out liner sleeves, made in two pieces of graphited rubber; the Hamer E-Z out valve seats, made with thin hard rubber ring which takes up any irregularity due to seats having been forced in pump; and the Taylor-Mildren wire line clamp, embodying new feature of toggle joint principle in applying gripping pressure.

JACKSON Engineering Corp., Okla. 94, 95, 96, complete line of absorption and vapor recovery plant equipment with working models, prints, photographs and description of many new refinements. Fluor Corp., Ltd., will exhibit in same booths complete new motor-driven model Redwood cooling tower with sections in detail. "Unipulvo," for utilization of petroleum coke for boiler fuel, will be shown.

* * *

Jones & Laughlin Steel Corp., Okla. 12, 13, 14, 15, 16, J & L products, double length linepipe; A. P. I. seamless casing; upset seamless drill pipe; plain A. P. I. tubing; seamless upset tubing and sample board showing various tubular products complete sets of materials showing progress in making casing and tubing; and original oil paints of two J & L works. Attending F. D. Grunder, manager tube sales; A. E. Crockett, manager of bureau of instruction; H. L. Miller, St. Louis sales manager; H. P. Quinn, Tulsa representative; A. P. Holloway, Fort Worth representative; Carl E. Swindler, St. Louis representative; J. Z. Collier, Assistant general manager; J. H. Sennett, superintendent of welded tube department; H. E. Fisher, superintendent seamless tube department; W. R. K. Scott, instruction department; J. B. Hungate, St. Louis sales office.

KELLOG Switchboard & Supply Co., Scientific & Technical 7, demonstrations of all essential materials for construction and operation of telephone communication in fields. H. M. Stewart and C. G. Gardner will attend.

* * *

The Klenzmotor Corp., Calif. 53, latest design electrically operated automotive cleaning machine for washing out crankcases, transmissions and differentials before filling, and the new electric heating unit with partial assemblies of special parts.

What Exhibitors Will Show at Tulsa

LINK-BELT Co., Texas 85, 86, various rotary chains for drilling including the Hyper chain recently announced, and model of the Link-Belt vibrating screen for screening rotary shale mud, with photographs of installations and samples of chains. Charles E. Markey, in charge; Charles Weiss, chief engineer; H. C. Wallace, field representative; George Howson, field representative; C. W. Spalding, sales manager; Ewart Plant, Indianapolis; E. G. Wendell, Dallas representative; Geo. P. Torrence, vice-president of Ewart works; and F. S. O'Neil, will attend.

* * *

Leeds & Northrup Co., Scientific & Technical 59, 60, the L & N anticipatory recording controller consisting of an anticipatory recording controller, a double motor, balancing three-position valve and relays; a display panel illustrating working models of the L & N potentiometer recorder, potentiometer pyrometers, controllers, and pyrometer checking equipment. In attendance H. Brewer, B. F. Koepke, G. C. Graf, R. W. Bergen, and M. B. Fisher.

* * *

Louis-Allis Co., Calif. 44, cut-away view of "explosion-proof" electric motor, and points on safety in use of electric motors in oil industry. L. F. Keeley, Milwaukee office, and Messrs. Woobank and Chenoweth, Tulsa representatives, will attend.

* * *

Lion Brothers Co., Refiners & Marketers 23, embroidered emblems and insignias of all types for uniforms.

* * *

The Leavitt Machine Co., Calif. 16, demonstrating Dexter Globe valve reseating machines, Dexter gate valve reseating machines, Dexter pump valve reseating machines, and Dexter tank car outlet valve reseating machines.

MULTI-METAL Wire Cloth CO., Calif. 56 line of wire cloth and metallic filter cloth for refineries including Gray towers, vapor phase cracking, percolating filters, contact filtration, and flame arresters in the following metals: brass, copper, phosphorbronze, steel, pure Swedish iron, aluminum, Everdur, pure nickel, monel metal and Enduro KA2. Attending Frederick Stern and Lloyd M. Hopkins.

* * *

Mine Safety Appliances Co., Scientific & Technical 34, line of respiratory protective equipment including the Permissible MSA combination hose mask and MSA tank gauger's mask; approved oxygen breathing apparatus; Edison electric safety cup lamps; gas detectors and recorders; H-H inhalator for resuscitation; miscellaneous protective safety clothing and various first aid materials as kits, hot pads, surgical dressings; and the new MSA protective hats and caps for preventing head injuries.

* * *

Martin-Decker Corp., Texas 68, new Martin-Decker automatic recording mud scales for circulating mud in rotary wells; the Martin-Decker automatic recording weight indicator and super-sensitive vernier gauge; steel panel boxes for mounting the gauges; tension indicator; the Martin-Decker, non-clog, non pulsating slush pump gauge; and Martin-Decker pump dynamometer. Attending E. L. Decker; R. R. Robinson, consulting engineer; and E. A. Miller, Reed Roller Bit Co.

* * *

Michigan Valve & Foundry Co., Okla. 11, cut-away sectional and working models of plug valves made of Meehanite metal.

* * *

McCampbell & Co., Refiners & Marketers 55, exhibit of service station uniforms adopted by oil companies, and uniforms that have not been selected.

* * *

The Medart Co., Texas 12, several new items in power transmission machinery applicable to the oil industry including sheaves for V belt drives; Medart Timken equipped self-aligning pillow blocks with wedge adjusting heavy oil field base plates, which are used as outboard bearings in connection with gas engines for oil well pumping; and the heavy duty Hercules oil field pulleys, various types of cut gears and flexible couplings. W. G. Kessling in charge.

* * *

The McAlear Mfg. Co., Calif. 39, 40, 65, 66, a differential pilot operated gas fuel boiler governor for sensitive control of high pressure boilers, particularly on rotary drilling service; line of liquid level controllers, strainers, pressure regulating valves, and casing-head regulators.

* * *

Mid-Continent Petroleum Corp., Refiners & Marketers 28, 29, announcement will be made of improved features of Diamond 760 motor oil. Display will be of Mid-Continent's product, with new and unique background.

* * *

Martin & Schwartz, Inc., Refiners & Marketers 54, the new positive displacement double piston type meter pump, similar in appearance to the regular M & S meter, but with the new Universal positive displacement meter. The company's new price signs for service stations will be exhibited. These have four compartments for showing the total price, or the price of gasoline and the state tax. Present M & S price regulators can be converted by buying the new card inserts.

* * *

Mid-Kansas Oil & Gas Co., Refiners & Marketers 34, 35, 36, will display a miniature gasoline plant, producing properties and refinery in actual operation on Mid-Continent crude oil.

* * *

McEverlast, Inc., Okla. 36, 37, new educational film "Defeating Corrosion" featuring the McEverlast mechanical method of applying protective coatings, and pictures and samples of pipe coating machines and of coated pipe. Edmund Shank, Los Angeles; S. S. Gibney, Dallas; W. L. Lewis, Dallas; H. B. Mayes, Houston; and F. B. Benoist, St. Louis, will attend.

* * *

Midland Chamber of Commerce, Arcade 13, maps, photographs, and signs exploiting Midland as the chief residential and office headquarters city of the Permian basin of West Texas and eastern New Mexico. Paul T. Vickers in charge.

NICHOLSON Clock Co., Scientific & Technical 10, the McGaughy integrator, deadweight testers, deadweight gauges, tools and dies, a few stampings from dies, and possibly some vending machines.

* * *

National Carbide Sales Corp., Okla. 31, National calcium carbide in glass specimen jars, the empty light gauge steel drums for shipping the material, the National V-G portable lights, the National V-G handy-lights, and the National carbide lanterns.

* * *

National Tank Co., Lot B, various sizes of National oil and gas separators including the new type C separators; separator equipment and controls with several new features in control; the National automatic air-gas lift intermitter with some new designs in intermittent remote control; new tank equipment along with regular National tank equipment.

* * *

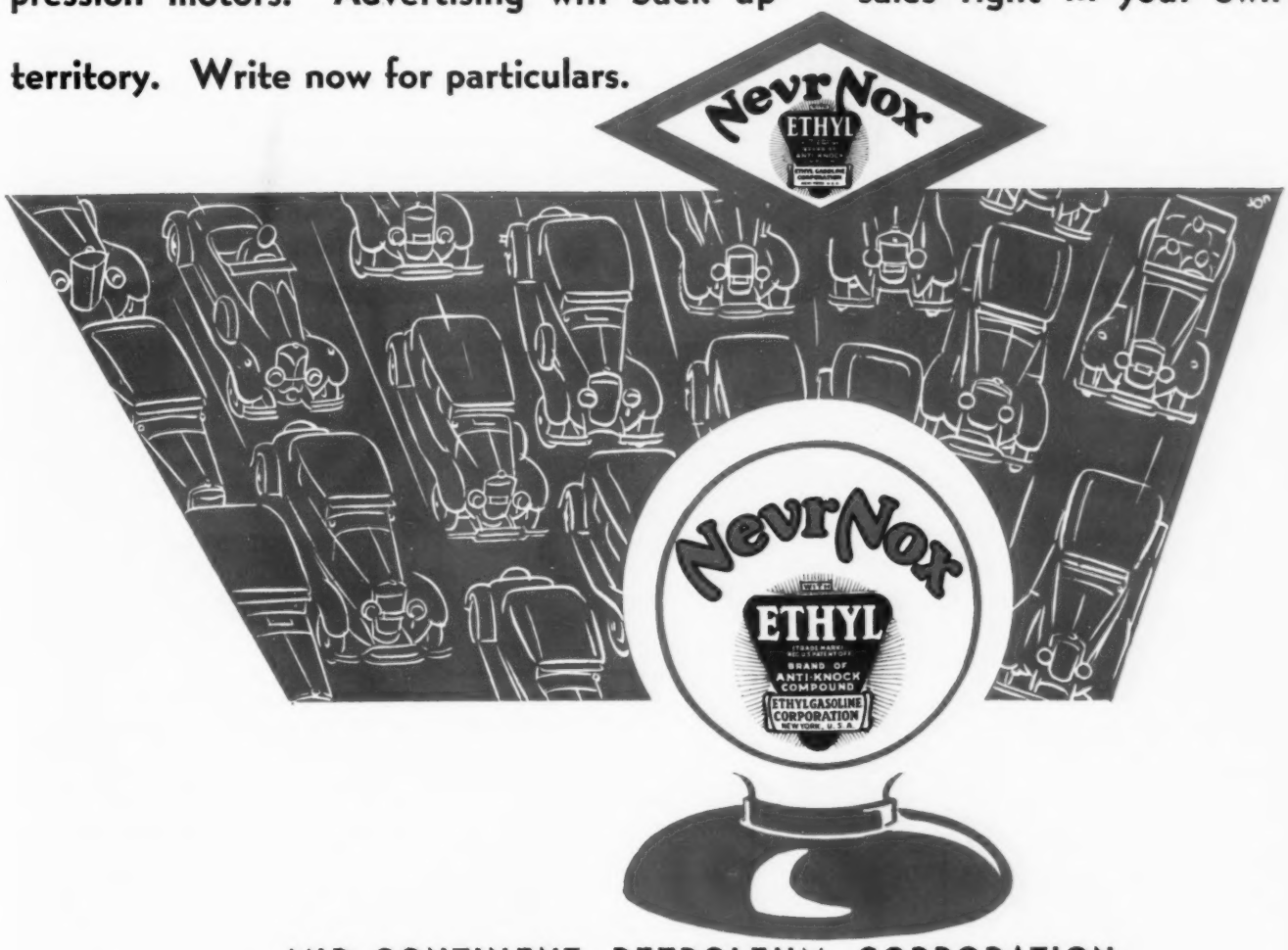
National Equipment Corp., Lot C, the new "Little Gold Digger" trench machine cutting from a trench three to six inches wide and three feet deep of the C. H. & E. Division.

* * *

National Foam Systems, Inc., Okla. 17, four models of foam producing ma-

PERFORMANCE
brings them back

Motorists are always seeking better performance . . . quicker starting . . . zippy getaway . . . power for the hills . . . speed. Use is proving they get more from a tank of NEVRNOX ETHYL. It's the famous high point NEVRNOX gasoline plus ETHYL . . . built for high compression motors. Advertising will back up sales right in your own territory. Write now for particulars.

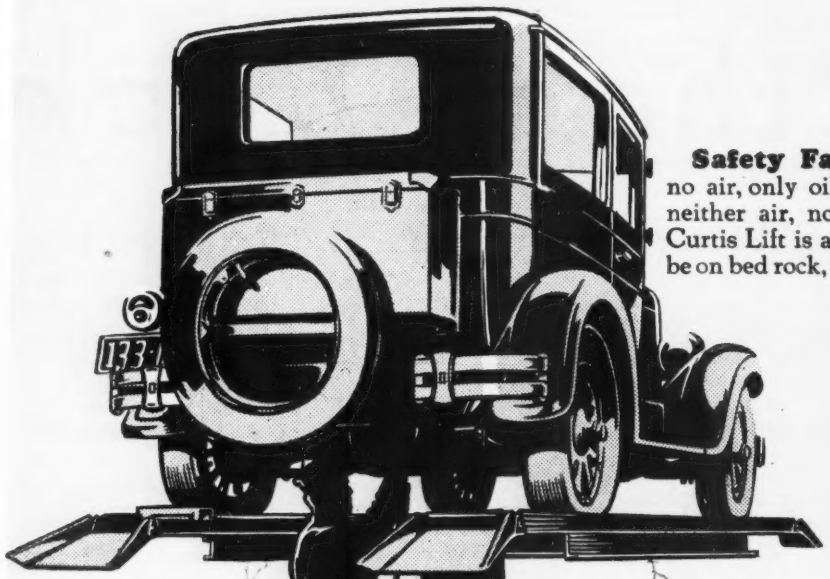


MID-CONTINENT PETROLEUM CORPORATION

General Offices: TULSA, OKLAHOMA

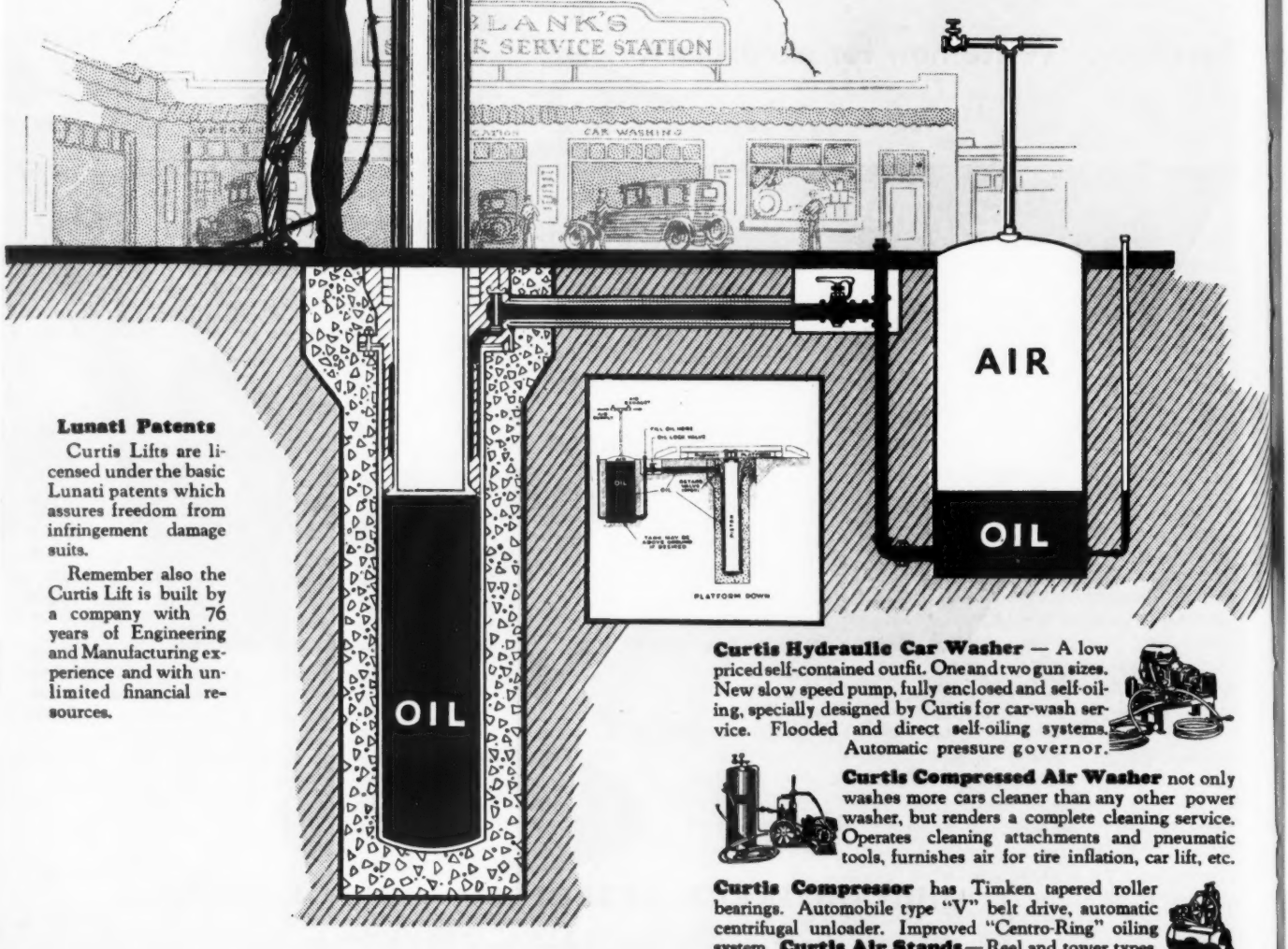
CHICAGO . . LINCOLN . . ST. LOUIS . . WATERLOO

Why the CURTIS super-safe



Safety Fact No. 1 — In the Curtis Lift there is no air, only oil [incompressible] in the cylinder. There is neither air, nor oil in the plunger. At any height the Curtis Lift is as fixed, solid and unfluctuating as it would be on bed rock, because of the oil-lock valve between the cylinder and the oil supply tank. Therefore, it is impossible for the Curtis Lift to drop even when all the air is exhausted from the tank. [Study the explanatory cross section shown here.]

Safety Fact No. 2 — The Curtis Lift cannot even lower without two deliberate actions on the part of the operator. He must both open the air valve and then step on the oil-lock valve, because the Curtis both lifts and locks by oil.



Lunati Patents

Curtis Lifts are licensed under the basic Lunati patents which assures freedom from infringement damage suits.

Remember also the Curtis Lift is built by a company with 76 years of Engineering and Manufacturing experience and with unlimited financial resources.

Curtis Hydraulic Car Washer — A low priced self-contained outfit. One and two gun sizes. New slow speed pump, fully enclosed and self-oiling, specially designed by Curtis for car-wash service. Flooded and direct self-oiling systems. Automatic pressure governor.

Curtis Compressed Air Washer not only washes more cars cleaner than any other power washer, but renders a complete cleaning service. Operates cleaning attachments and pneumatic tools, furnishes air for tire inflation, car lift, etc.

Curtis Compressor has Timken tapered roller bearings. Automobile type "V" belt drive, automatic centrifugal unloader. Improved "Centro-Ring" oiling system. **Curtis Air Stands**—Reel and tower types.

Lift is at *all heights!*

Safety Fact No. 3—The oil-lock and air operating valves on the Curtis Lift are out from under the lift. No one can operate the lowering mechanism intentionally or accidentally while under the lift.

Safety Fact No. 4 — An automatic retard valve restricts the outflow of oil and mechanically controls the lowering of the lift at a safe, predetermined speed, independent of the operator.

Safety Fact No. 5—The Curtis Lift is as super-safe structurally as it is in its operating principle. The platform spider is structural steel in "X" form, the strongest construction known to Engineering. No castings with the possibility of blow holes, cold shuts or hidden defects. The structural design has been tested to stand 400 to 500% of the weight or strain that can be normally put on it with a heavy automobile. No Curtis Lift has ever had a structural break or collapse.

Safety Fact No. 6—In the Curtis Lift the packing gland is at the top of the cylinder, easily accessible for adjustment and where the need of adjustment can instantly be seen. Contrast this with a lift that has internal moving or wearing parts in the cylinder or plunger, buried under ground or otherwise inaccessible. The Curtis Lift has no leather cup on plunger to wear, replace or which is impossible to inspect.

Safety Fact No. 7— The Curtis platform is made so the attendant cannot get toes under the edge when it lowers. Even the ends are hinged as an additional safeguard.

Send for the Curtis Lift catalog which illustrates and describes its construction in every detail. Your own good judgment will tell you then what lift to buy.

CURTIS

St. Louis

Curtis Pneumatic Mchy. Co.,
1965 Kienlen Ave., St. Louis—518-X Hudson Term., N. Y.

Please send catalog and information about [State product you are interested in]

Name_____

Address_____

4

CARE WILL SAVE YOUR CAR

chines ranging in capacity from 300 to 3000 gallons of foam per minute. The machines produce solutions at the machine and the solutions are discharged through hose lines or pipe and when joined at the nozzle or in the mixing chamber foam is produced. The "Super" ejector's capacity is 3000 gallons of foam per minute and may be a portable or permanent installation.

* * *

Naylor Pipe Co., Okla. 20, 21, to show new data never before presented on Naylor Spiralweld pipe for air, water, oil and gas service; the exhibit will consist of samples of pipe and motion pictures of various installations. E. W. Hough, vice-president and director of sales; and Messrs. Kirby, Field, and L. S. Allen will attend.

* * *

National Equipment Corp., Lot C, three Parsons ditchers, the new "35," the biggest of the line for digging in any soil condition; the "25" full-multiplane, medium range; the "31" the largest full-multiplane ditcher; and an Insley full-revolving convertible half-yard shovel.

* * *

OAKITE Products, Inc., Texas 61, 62, used equipment will be collected daily from local producing companies and cleaned in regular size supply yard tank; small drum type cleaning tank for small parts cleaning will be exhibited. In attendance H. L. Gray, B. C. Browning, D. O. Crawford, and W. B. Mix.

* * *

The Ohio Steel Foundry Co., Refiners & Marketers 9, new assembled type fitting using a ball joint seating on a tapered seat for easier dismantling for cleaning; the Ohiolock; the Ohiolock frictionless type A and B; and tube supports made of heat resisting alloy under the trade name of Fahrite.

* * *

Walter O'Bannon Co., Texas 104, new O'Bannon composition valve cups to fit standard and patented working barrels, and O'Bannon Cro-Lay tubes; other products are O'Bannon line of liner barrels, valve cups, balls and seats, Cro-Lay barrels frontlock hook, sucker rod elevators, polished rod clamps, S. Link, bell nipples, sucker rod sockets, tubing hooks, Moody automatic tubing spiders, and Viking rotary pumps. In attendance Walter O'Bannon, president; Paul H. Wendel, sales manager; and Charles H. Bloom, chief engineer.

* * *

The Oster Mfg. Co., Arcade 1, 2, 3, complete line of hand and power operated pipe and bolt threading tools and machines including Williams Rapiduction pipe machine. Exhibit in conjunction with the Williams Tool Corp., these companies having been merged recently.

* * *

Oklahoma Iron Works, Calif. 31, 32, its complete line of forged steel fittings, also forged steel flange unions

What Exhibitors Will Show at Tulsa

with metal gasket in both the two piece and four piece types, combination casingheads. Braden heads, casing rings, wedges, and various types of forgings and castings. Wm. Wright, R. W. Neal, Geo. Clark, and W. D. Taylor will attend.

* * *

The Oil Conservation Engineering Co., Okla. 82, 129, introducing new tank gauge and several improvements among other fittings; showing company's complete line of tank fittings, including the Oceco flame arrestor, conservation vent valve, two bolt pipe coupling, still safety valve, look box, and Oceco bubble cap and tray for bubble towers.

* * *

Oklahoma Steel Castings Co., Texas 47, 48, representative line of refined steel and alloy steel castings including electric steel castings for rotaries, draw works, fishing tools, elevators, spiders, pumping equipment, derricks, rotary bits and reamers, gears, pinions and sprockets, and high pressure castings such as valves and fittings. E. H. Cornelius, president; B. Fleeger, vice-president; L. C. Baston, secretary; Anton Johnson, works manager; S. J. Moore, sales manager; and E. M. Newland, sales department, will attend.

* * *

The Oil Well Improvements Co., Okla. 51, 52, the new O. W. I. packing head which controls the flow through outer strings and supplements the control casing head which controls fluid in the inner string of casing, and the new all purpose control head unit for lubricating tools under pressure.

PITTSBURGH Equitable Meter Co., Scientific & Technical 37, 38 Emco orifice meter; water meters for oil field service; oil meters in production and refining; gasoline meters for service stations; Emco and Ironclad domestic gas meters; Emco No. 4 gas meters; Emcorector for proper registration of high pressures measured through a positive gas meter; Emco high pressure and low pressure balanced valve regulators; Emco type B service regulators for low volume pressure reductions; new type high pressure field regulator, particularly for pumping engines and fuel service; Emco water heater type regulator; Crawford sensitive regulator; water and gas regulators for gas refrigeration service; and latest development of Emco regulators in handling liquefied gas pressure reductions.

* * *

Page Steel & Wire Co., no booth given complete exhibit of Page and Page-Armco welding wire and electrodes including the new line of Page and Page-Armco flux-coated and Page special coated electrodes; and the Page Alcoa aluminum chain link fence.

* * *

The Parkersburg Rig & Reel Co., Outside and Texas 74, 75 a Parkersburg No. 4901-B 122 foot A. P. I. steel derrick and Parkersburg's new chain driven rig front and a Type 70 A 7000 foot double brake sand reel; a complete set of steel wheels and steel equipment including 26-foot ICR type center rocker walking beam, steel "A" frame posts and HB pitman; a Parkersburg pumping counterbalance; Parkersburg single deck roller bearing crown block; and a set of 8-foot triple tug bull wheels. Smaller products at inside booths.

* * *

Patterson-Ballagh Corp., Calif. 6, 7, 8, 9, several models demonstrating use and properties of Bettis protectors and stabilizers, with actual samples and the tools used in installation; and the latest Bettis oversize protector.

* * *

The Pyle-National Co., Texas 65, 66, floodlights for all purposes, service station lighting equipment, turbo-generators for field service, electrical fittings and equipment, and gasoline electric plant for field service. In attendance J. A. Amos, vice-president; R. L. Kilker, district sales manager; and E. A. Sipp, sales engineer.

* * *

Pyrene Manufacturing Co., Okla. 134, entire line of Pyrene fire extinguishers and tire chains for passenger car and oil field special truck chains; the 2½-gallon Phomene foam type and Guardene soda and acid extinguishers; the 10 and 40 gallon portable Phomene extinguishers on wheels and Phomene accumulators for fixed fire hazards; a cut-away exhibit of the one and 1½-quart Pyrene fire extinguisher; and the new Pyrene bracket for mounting one pint extinguishers on auto steering post. In attendance J. J. Doherty, Kansas City district manager, and representatives B. S. Allen, J. C. Bolding and S. C. Moore.

* * *

Progressive Brass Mfg. Co., Texas 10, different brass, bronze and aluminum castings, with finished bronze replacement parts for oil field gas and steam engines and clutches.

* * *

The Prescott Co., Outside, a seven by twenty inch piston type, duplex, double acting, power driven slush pump, direct connected to a 225 horsepower Westinghouse steam turbine, a motive power such as electric motor, steam turbine, and Diesel or gasoline engine, with a speed of not more than 900 revolutions per minute may be used to drive pump without any intermediate drive between pump pinion shaft and the motive power.

* * *

The Permutit Co., Texas 15, a new model small size water softener; a model typical installation of a Permutit water softener and filter; and two kinds of Ranarex machines, a CO_2 indicator and recorder, and a gas density machine that measures mechanically the specific gravity of gasses passing through it. E. D. Dando, J. R. Crocker, P. V. Barmann, and J. C. Tracey will attend.

* * *

Peerless Supply Co., Texas 118 ,119, first showing of the McKissick ball bearing, universal joint, tubing swivel hook for use with McKissick safety block; usual line of Peerless all steel load binders, Peerless floating type boxes, McKissick safety blocks, Peerless speed jacks, McKissick tubing bleeder and standing valve, and Peerless sucker rod guides. Smith Welding Equipment Corp. will share booth showing Smith lifetime guarantee welding and cutting equipment distributed in that territory by Peerless Supply Co. In attendance W. H. McKissick, C. F. King, W. D. McKinley, and O. M. Smith.

* * *

The Perfection Manufacturing Co., Refiners & Marketers 64, exhibit of bulk station pumps, the Perfection rotary gear pump with helical gears and two moving parts.

* * *

Prairie Oil & Gas Co., Prairie Pipe Line Co., and Producers & Refiners Corp., rest room in Texas 100, 101, 110, 111.

* * *

Pressed Steel Car Co., Refiners & Marketers 11, a 10,000 gallon insulated tank car used in the production and refining branches. Frank L. Johnson, C. H. Jackman, and D. J. Whalen will attend.

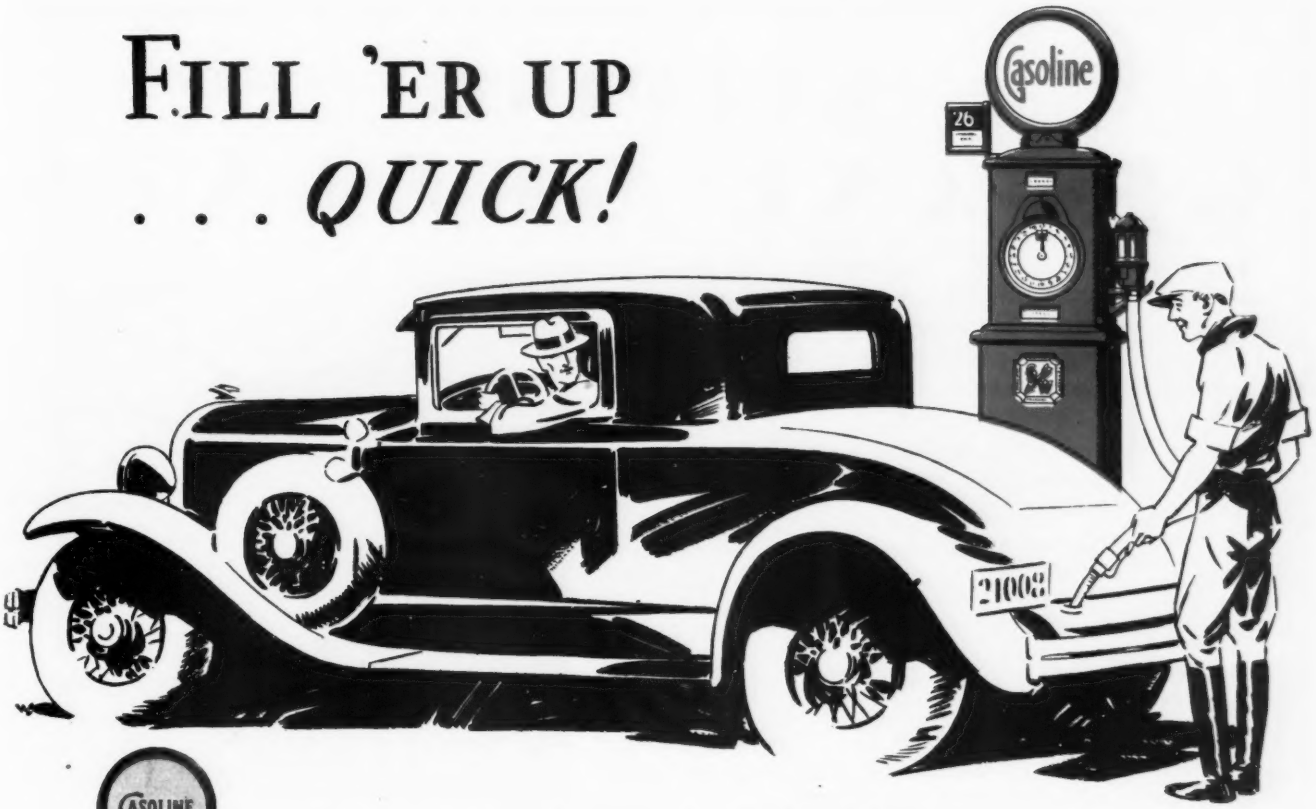
* * *

Pressed Steel Tank Co., Refiners & Marketers 51, a number of different types of cylinders for use in interstate shipment of liquefied and compressed gases, and drums and barrels for shipments of special oils and greases. Some cylinders will be cross-sectioned to show distribution of metal in the seamless process. Herman Merker, secretary and sales manager; J. A. Barr, western representative; and N. L. Nelson, sales engineer, will attend.

* * *

Pittsburgh Screw & Bolt Corp., 1 and 2, Texas Bldg., will show thread protectors, sucker rod protectors, tool

FILL 'ER UP . . . *QUICK!*



The O. K. 7 D.

Perhaps he intends to make Carlsbad by 6 o'clock. Maybe Hot Springs for lunch. Or Galveston before it is too late for a swim.

The tourist has no time for filling stations where equipment is antiquated and slow. With his destination in mind, the tourist intends to spend the minimum time in "filling 'er up."

The appearance of the Southwest Pump Company's equipment creates a favorable impression upon the motorist. The strong lines and the simplicity of both the hand-operated visible OK-7D and the newly designed meter pump M-12 appeal to the tourist. The speed and efficiency of these pumps enables the station operator to start the tourist on the road again in the minimum of time.

METER PUMPS — VISIBLE PUMPS
PRICE SIGNS — EZMTY BARREL LIFT
MANUFACTURERS *and* DESIGNERS

ADDRESS DEPARTMENT N

V. P. 12 Price Sign

Fits any make of pump. Uses printed price inserts between two pieces of glass. Can furnish price cards in 10ths of cent; quarters, halves or whole numbers. Single lots $1.45 each with 12 price cards. Quantity prices will be sent on request.

The* Service Station is Your Point of Contact with the Public.. *It should

create a Good Impression

Southwest Pump Company

BONHAM, TEXAS

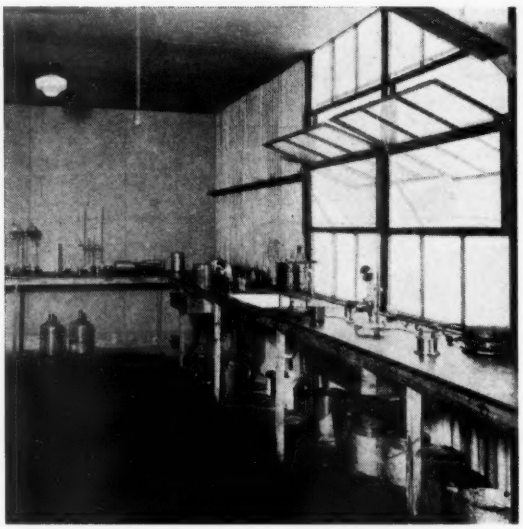
KEEPING GREASE GREASE!

Giving the customer an absolute uniform grease at all times is stressed throughout the manufacturing process by the International Lubricant Corporation, at New Orleans.

During the cooking process, positive temperature time control is maintained. All materials are weighed into the kettles, and all materials are weighed again when finished.

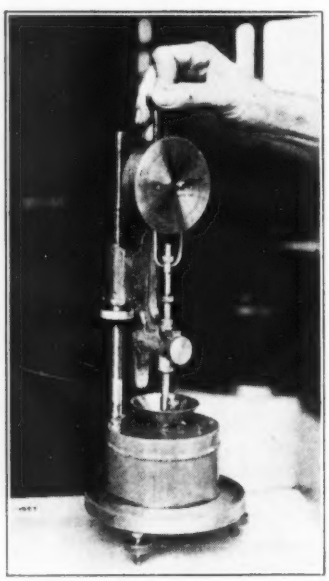
The product is then subjected to a careful analysis in the laboratory, by an expert chemist.

Then, and then only, is the grease ready to be dispatched to our customers.



Part of the laboratory of the International Lubricant Corporation

QUALITY GREASES



The Penetrometer for testing grease

Manufacturers of all types of Automotive, Industrial and Marine Greases, of high quality and absolute uniformity.

For sale only to jobbers and refiners. Excellent facilities for export.

Let us know your requirements. We will respond promptly with samples and prices.

INTERNATIONAL LUBRICANT CORPORATION

"With Quality Comes Leadership"

NEW ORLEANS **LOUISIANA**

What Exhibitors Will Show at Tulsa

joint protectors and protectors for Victaulic pipe. The following men will attend for the company: John P. Hoelzel, Harry W. Schuetz, R. W. Dierker, and George Cornelius.

* * *

Walter J. Podbielniak, Scientific & Technical 11, 12, charts, tables and wall exhibits of Podbielniak improved fractional distillation analysis apparatus, including first showing of precision model fractionating column, and the precision model barometric type manometers; and of the commercial analytical and research laboratory. Daily operation of fractional distillation analysis apparatus, with "robot" control.

QUIGLEY CO., Refiners & Marketers, 20, 21, demonstrations of Hytempite, high temperature cement; Ganisand, granular refractory; Quigley gun, shoots refractory and concrete mixtures; Q-Seal, plastic, expansive, joint-sealing compound; Q-Chrome, neutral base refractory cement; acid proof cement; triple-A protective coatings, for metal, concrete, stucco and wood; and Annite, all-purpose cleaning compound.

REPUBLIC STEEL CORP., Calif. 23, 24. 25, 26, 27, Republic electric weld pipe, Toncan iron pipe, Toncan plate, rivets, and sheets for corrosion resisting applications, Enduro stainless iron tubes as used in cracking stills and other forms, and Agathon alloy steels for drilling tools, casing tongs, etc.

* * *

The Refinery Supply Co., Scientific & Technical 8, 9, first showing of Ac-Me tank car calculator for figuring corrected tank car volumes; the improved Ac-Me gravitometer for recording the specific gravity of natural gas; and instruments and specialties including oil thieves, vapor pressure bombs, Ac-Me specific gravity gas balance, Ac-Me recording gravitometer, tank car calculator, R. S. manometers, Trerice steam traps, Hay's CO_2 recorders and gas analyzers.

* * *

The Ridge Tool Co., Texas 31, 32, line of pipe wrenches in regular and end types, pipe cutters featuring the safety-razor like removable blade, new type of stocks and dies, and super wrenches with compound leverage.

* * *

Joseph Reid Gas Engine Corp., Outside, the new 14½ by 18-inch engine which augments the Reid Type C two cycle engines with additional features of Timken main bearings, high pressure lubrication to crank and crosshead pins, rotary type magneto, Eclipse lubricator and a centrifugal water pump. The new Reid reversible countershaft for installations where a belted reverse countershaft is preferred to the direct-connected gear-driven reverse clutch, will be exhibited.

* * *

The H. H. Robertson Co., Okla. 81, Robertson Protected Metal siding and roofing material, rust and corrosion proof, of sheet steel protected with coatings of asphalt, asphalt impregnated asbestos felt and a bitumastic outer coating; and the Robertson stationary ventilator for ducts and hoods especially for removing corrosive fumes. Representatives attending F. C. Russell, sales promotion manager; T. B. Johnson, St. Louis manager; and R. B. Archer, Houston manager.

STOODY CO., Texas 44, 45, the company's tungsten carbide metallic diamond substitute for drilling bit fabrication, Borium, now applied with no special care or preparation using either the electric arc or the oxyacetylene torch.

* * *

Smith Separator Co., Texas 90, 121, the "Improved Smith" oil and gas separators with mist traps and improved baffles; the Ever Ready tubing protector for governing the drop of tubing and to anchor at any point at the same time; and Waters water gauge cocks.

* * *

Shand & Jurs Sales Co., Calif. 37, new differential type liquid level controllers with diaphragm valves for refinery and gasoline plant service; complete line of fittings for large storage tanks, vacuum and pressure vent valves, automatic tank gauges, winches and swing joints, and Shand & Jurs hydraulic operated remote controlled valves for truck tanks, loading racks, and bulk tanks. Attending R. C. Shand, A. E. Jurs, and R. M. Young.

* * *

The Sherwin-Williams Co., Okla. 53, 54, Sherwin-Williams line of paints, varnishes, enamels and protective coatings featuring Lyne-Kote, high melting point coal-tar pipeline coating; Petro-Seal, for sealing interiors of oil and gasoline tanks; and Sherwin-Williams gasproof paints for interior and exterior use. Attending are Arthur Larkins, Cleveland; K. B. Keyerleber, Cleveland; W. P. Clark, Kansas City; A. W. Everett, Tulsa; and W. F. Adams, Tulsa.

San Angelo Board of City Development, Scientific & Technical 46, wall map of Texas showing San Angelo's position in reference to large cities and oil fields, with pictorial display of city's large buildings, and map of Edwards plateau showing holdings of oil companies, and ownership map of west Texas Permian basis. Miss Micaela Rogers in charge.

* * *

Southwestern Bell Telephone Co., Refiners & Marketers 17, working models of telephone typewriters reproducing typewritten copy over long distances; and colored hand telephones to match room and office decorations.

* * *

Sperry-Sun Well Surveying Co., Scientific & Technical 29, 30, Surwel gyroscopic clinograph, Syfo clinograph, side wall sampler, model gyroscope, Scorsby machine, Surwel service trucks with instrument room and dark chamber for developing films.

* * *

Sharpsville Boiler Works Co., Refiners & Marketers 30, the Sharmeter, the company's meter dispensing system for motor fuels in single and tandem cabinets, and the Sharlite, the company's floodlight for service stations, bulk plants, refineries and other night activities.

* * *

Skelly Oil Co., Refiners & Marketers 46, 47, 58, 59, a mechanical display featuring all Skelly products.

* * *

Schramm, Inc., Lot C, standard No. 120 portable engine driven compressor, and an engine driven welder compressor mounted on wooden skids. C. W. Holmes, manager of the Tulsa branch, in charge.

* * *

Sivyer Steel Casting Co., Texas 6, 7, 8, 9, display of rough and machined alloy steel castings, and laboratory and metallurgical appliances in operation necessary to the production of high grade alloy steel castings. In attendance L. S. Peregoy, president; M. A. Fladoes, vice-president in charge of sales; D. Zuege, metallurgist; A. H. Oberndorfer, advertising manager; and Chas. A. Fischer, Fort Worth representative.

* * *

Shell Petroleum Corp., Refiners & Marketers 24, 25, samples of entire Shell line including motor and industrial oils and greases, and by-products.

* * *

Southern Pine Association, outside, full size, all wood drilling derrick fabricated of southern pine.

What Exhibitors Will Show at Tulsa

TUBE-TURNS, INC., Okla. 22, seamless drawn fittings for pipe welding, stock sizes of Tube-Turns from 1 through 18-inch in standard iron pipe sizes, and 1½-inch to 12-inch in extra heavy iron pipe sizes in 45 and 90-degree elbows and 180-degree returns; with engineering data and specifications for welded pipe lines. John G. Seiler, sales manager, and Jas. T. Howington, will attend, with officials of the Moorlane Co., Tulsa, and the Maintenance Engineering Corp., Houston, Tube-Turn representatives.

* * *

The Timken Roller Bearing Co., Texas 72, 73, a steel mill type bearing, weighing about 500 pounds, mounted on a vertical shaft, suspended weight being carried by a smaller bearing, the shaft driven by a small electric motor using a fish line for a belt to show capacity of bearings for carrying thrust loads. In attendance L. M. Klinedinst, vice-president; H. I. Barth, district manager industrial sales, Dallas; R. P. Proffitt, district manager industrial sales, St. Louis; J. A. Robinson, district manager industrial sales, Birmingham; and G. W. Curtis, district manager industrial sales, Pittsburgh.

* * *

Taylor Instrument Companies, Scientific & Technical, 35, 36, a line of Tycos instruments including instruments for indicating, recording and controlling temperatures and pressures, viscosimeters, barometers, vacuum gauges and other instruments applicable for field and refinery use.

* * *

Twin Disc Clutch Co., 80 Oklahoma Bldg., will exhibit 42-inch oil field type clutch mounted on a countershaft of a rotary drilling rig; one heavy duty power takeoff unit with 12-inch clutch; other unmounted clutches of various sizes and types.

* * *

Turbo-Mixer Corp., 61 Scientific & Technical, working models of Turbo-Contractor for the contacting of fullers earth and oil, continuous Turbo-treater for treating oils and distillates, and Turbo-mixer for instantaneous preparation of drilling mud. Large size impellers will be shown also.

UNION CARBIDE & CARBON CORP., Texas 17 to 21, with its subsidiaries, Linde Air Products Co., Oxweld Acetylene Co., Union Carbide Sales Co., Haynes Stellite Co., and the Prest-O-Lite Co.; guessing contests on tensile strength of oxy-acetylene welding; illuminated map of corporation's production and distribution facilities; complete display of various products for oil and gas industry. In attendance H. H. Griffith, W. S. Winn, A. C. Johnson, and L. B. Moon.

VICTOR WELDING EQUIPMENT CO., Texas 46, demonstrate metal cutting with oxygen and liquid petroleum gases, and cutting, welding and brazing equipment for natural gas and oxygen; complete line of Victor pipe line and refinery welding equipment with latest Victor senior and junior safety regulators. A. S. Heasley and E. A. Daniels attending.

WAUKESHA MOTOR CO., Okla. 89, 90, 121, 122, two new units developed in last few years, of the light weight, full Diesel type, and have been laboratory and field tested, and built with same crankcase bearings as Waukesha standard gasoline engines.

* * *

Wico Electric Co., Texas 126, 127, new type magneto for small engines; and same types of magnetos exhibited in previous years.

* * *

Warner Manufacturing Co., Refiners & Marketers 65, the Lightning grease liquefier and Aladdin grease liquefier service station equipment to empty old grease from the transmission and differential. The machines are portable and create their own steam supply.

* * *

Willard Storage Battery Co., Okla. 93, field storage batteries for starting large gas and oil engines, furnishing electric light, operating oil circuit breakers on large power units, and operating geophysical equipment. Men from main office and from southwest offices will attend.

* * *

Walworth Co., Okla. 104, 105, 106, 107, the new Walco wrench, drilling gate and line gate valves, two new bronze gate valves made especially for oil service, and the complete line of bronze, steel and iron body valves for production, refinery and pipeline service, with sectioned valves mounted on swivel stands.

* * *

Whealton & Townsend, Inc., Scientific & Technical 45, 58, an analytical laboratory showing gas and water analysis equipment in operation.

* * *

Wilson & Bennett Mfg. Co., Refiners & Marketers 39, display of lithographed steel cans, drums and pails, including every type of steel container used by the oil industry for the shipment and sale of its products. Display will be featured by continuous pouring demonstration to illustrate this feature of Por-Pail.

* * *

Wirt Franklin Petroleum Corp., a statue of Chief Palacine used in front of the company's service stations, seven feet high, with upraised hand, mounted on a triangular base.

* * *

Westinghouse Electric & Mfg. Co., Okla. 85, 86, 125, 126, 127, the new Westinghouse pumping gear unit for oil wells, and the new Visicode supervisory control equipment which remotely controls and supervises a large variety of power apparatus and operates over two wires. In addition to the equipment two small ornamental transparent derricks will contain installations of Westinghouse equipment for the oil field.

* * *

Wickwire Spencer Sales Corp., 79 Oklahoma Bldg., display illustrating different stages in the construction of wire rope.

YORK ICE MACHINERY CORP., Refiners & Marketers 69, section of shell and tube vertical ammonia condenser, section of forge welded ammonia receiver, samples of forge welded steel plates, and miscellaneous ammonia valves and fittings.

* * *

Young Engine Corp., Arcade 9, 19, a Young road boring machine for installing pipes and casings under railroads, paved highways, and streets. The machine is a horizontal rotary drill, with the pipe or casing, which remains in the ground, carrying the rotating cutting head. The power unit is placed on the bank of the ditch. A driving head forces the pipe forward, section by section, and dirt is removed by a spoon attached to a long handle or by water.

ALLIS-CHALMERS MFG. CO., Tent space outside, will exhibit motor driven pumping units including No. 11 oil well unit with 7-inch main shaft, interchangeable bearings, universal rails for any motor of 600 to 1200 r.p.m., post brakes, shock absorbing Texrope drive to give any number of pumping strokes, crank balance or flywheel optional, explosion proof motors. In attendance: D. M. McCargar, manager; R. A. Seymour and C. M. Starkey of Tulsa offices and other field representatives.

The COLDER the weather *the* GREATER your sales

As the *thermometer drops lower* ICY-FLO *sales mount higher*

A foot of snow—ice beneath—the thermometer at 10° below! Icy-Flo patrons rush to buy more Icy-Flo and recommend it to their friends, for they know that, no matter how cold the weather, their cars will start easily and run smoothly with Icy-Flo.

Icy-Flo, a secret blend of oils with a Pennsylvania base, lubricates thoroughly and efficiently in all temperatures whether 300° above or 30° below zero. Dealers will tell you that Icy-Flo patronage also increases their business in gasoline, grease and anti-freeze.

Your next winter's business depends on your good judgment now. Write immediately for our proposition to marketers and jobbers.

The ICY-FLO OIL Co.
YOUNGSTOWN, OHIO

ICY-FLO
The 30° below zero
MOTOR OIL

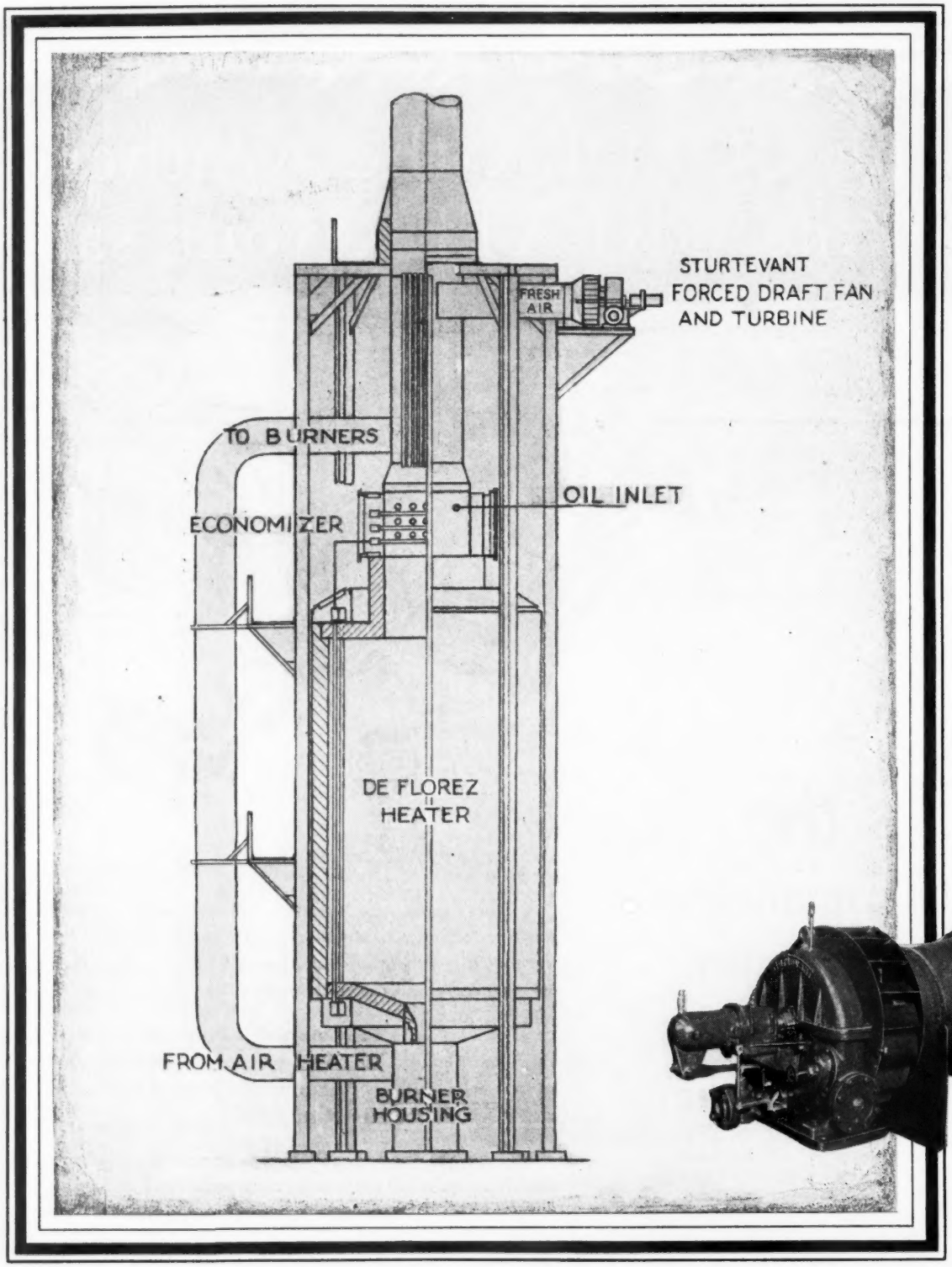
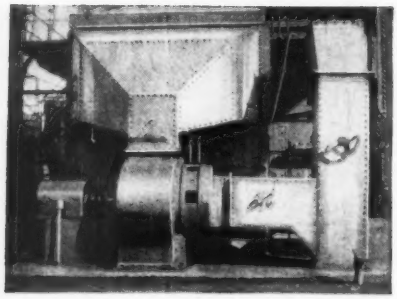
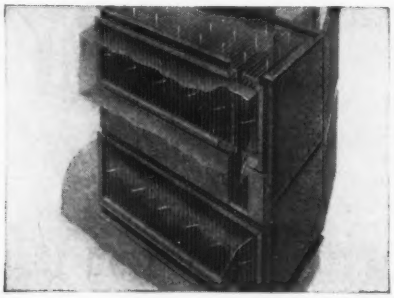


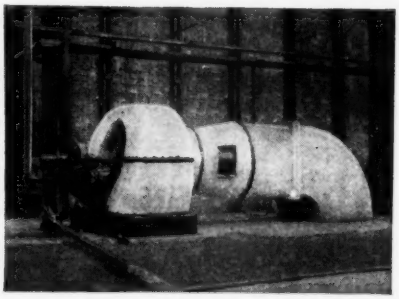
Diagram of a DeFlorez Heater, built by the M. W. Kellogg Co.



Sturtevant Forced Draft Fan to Air Heater



Sturtevant Air Preheater



Sturtevant High Pressure Propeller Fan

STURTEVANT
High Pressure Propeller Fans
for DeFlorez Heaters

This Sturtevant Fan is used for forced draft to oil and gas burners. It is designed primarily for direct-connection to various types of Sturtevant High-Speed Turbines, and operates at peripheral speeds of 24,000 to 25,000 feet per minute. Operation at these high speeds makes possible exceptionally low water rates for the turbines and high pressures for the fans.

The wheel of this Sturtevant Fan is mounted on the extended turbine shaft and is made of high-tensile cast aluminum. As shown in the diagram of a typical refinery installation, the fan and turbine may be located directly in front of the air-opening to the heater. Long connecting duct work is thereby eliminated. The equipment is rugged, yet compact, and fills a distinct need where space is at a premium.

Large numbers of these Sturtevant High Pressure Propeller Fans, driven by Sturtevant Steam Turbines, are used on DeFlorez Heaters operated by the Gulf Refining Company and the Texas Company, and have proved highly satisfactory.

We would welcome your inquiry regarding this or other Sturtevant Equipment for Refineries. We will gladly send you complete data...if you wish, one of our engineers will call on you.

Sturtevant Equipment for Oil Refineries

High temperature flue gas recirculating fans, propeller and centrifugal types.

Air preheaters—plate or tubular. We also design special heaters of alloy steel for high temperatures.

High pressure propeller fans for forced draft to oil and gas burners.

Turbines, motors and engines for fans or pumps.

Economizers for preheating oil or water.

Heavy duty draft fans for boiler houses.

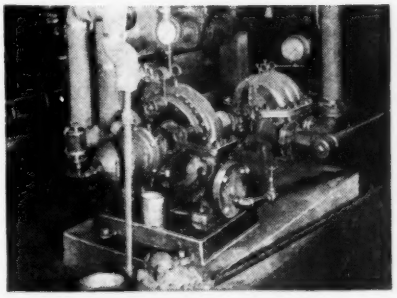
B. F. STURTEVANT COMPANY

Main Offices: HYDE PARK, BOSTON, MASS. - CHICAGO, ILL., 410 No. Michigan Ave., - SAN FRANCISCO, CAL., 681 Market St.

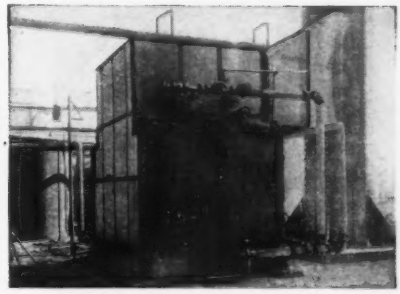
Branch Offices at: Atlanta, Baltimore, Boston, Buffalo, Camden, Charlotte, Chicago, Cincinnati, Cleveland, Dallas, Denver, Detroit, Hartford, Indianapolis, Kansas City, Los Angeles, Milwaukee, Minneapolis, Newark, New York, Omaha, Pittsburgh, Portland, Ore., Portland, Me., Rochester, St. Louis, San Francisco, Seattle, Washington, D.C. *Canadian Offices at:* Toronto, Montreal and Galt. *Canadian Representative:* Kipp Kelly, Ltd., Winnipeg. *Also Agents in Principal Foreign Countries.*

Sturtevant
REG. U.S. PAT. OFF.

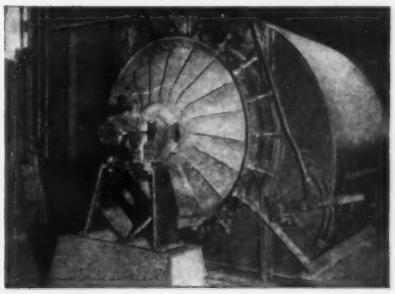
OIL REFINERY EQUIPMENT



Sturtevant Steam Turbine



Sturtevant Oil Economizer



Sturtevant Draft Fan for boiler-house use

"Yes . . . I saw that at the EXPOSITION"

Since employees in the fields, plants and offices of the petroleum industry will know so much more about practices and equipment after attendance at the 1930 International Petroleum Exposition, employers should plan to send all key men to Tulsa, Oct. 4th to 11th.

The required time and money will be profitably invested. With the knowledge, experience and inspiration they'll gain, workers will be more valuable both to their employers and to themselves.

INTERNATIONAL PETROLEUM EXPOSITION

and Congress

Tulsa Okla.

Oct. 4-11 1930

The 1930 Exposition will be the largest oil and gas show ever held. Space has been increased, new buildings added, and there will be more extensive displays and still further improved facilities for the comfort of visitors. The Scientific and Technical, Producing, Refining, Transporting and Marketing branches will be fully covered with exhibits and demonstrations.

For any information, address Wm. B. Way, Gen. Mgr., International Petroleum Exposition, Tulsa, Okla., U. S. A.

North Park Oil Wells May Double Supply of Dry Ice in U. S.

By Lawrence E. Smith
N. P. N. STAFF WRITER

TULSA

FROM that little, mountain-enclosed valley known as North Park, Colorado, there will come nearly as much of the refrigerant known as Dry Ice as is now made in the entire country. That is, if tests soon to be made prove the expectations.

A recent announcement by Continental Oil Co. that a contract had been made between it and the Dry Ice Corp. of America for utilization of the carbon dioxide gas yielded by two wells drilled by the Continental brings attention again to that isolated valley where the Continental pioneered in drilling a structure believed favorable for oil. It was back in 1926 that the first well was brought in. Another was drilled later. Both have been shut in. Oil was found, but the carbon dioxide gas caused so much trouble that both have been shut in for upward of two years.

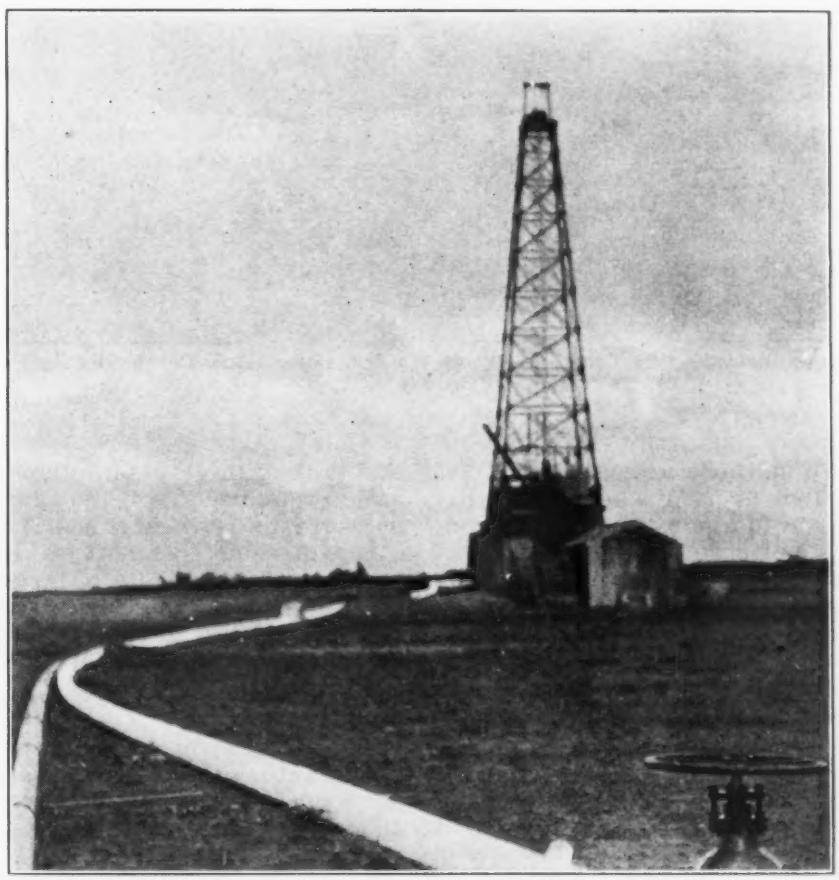
The Dry Ice Corp. believes that the venture will be profitable, as the high percentage of carbon dioxide in the gas will make concentration in the form of a solid refrigerant profitable. The company will build an elaborate experimental plant at Walden, the little town nearest the wells, within the next six weeks. If the preliminary work satisfies the company, a large unit will be constructed at Walden capable of making about 60 tons of dry ice daily. A new corporation will be formed in which the Continental and the Dry Ice Corp. will each have a half interest.

Dry Ice is the trade name for the refrigerant which is the solid or frozen form of pure carbon dioxide. The gas is well known. It is the one that causes the baker's bread to "raise" and puts the sparkle into soda water. It may be liquefied at a temperature around minus 88 degrees Fahr., under sufficient pressure, and it may be solidified under pressure if the temperature be brought to about minus 69 degrees Fahr.

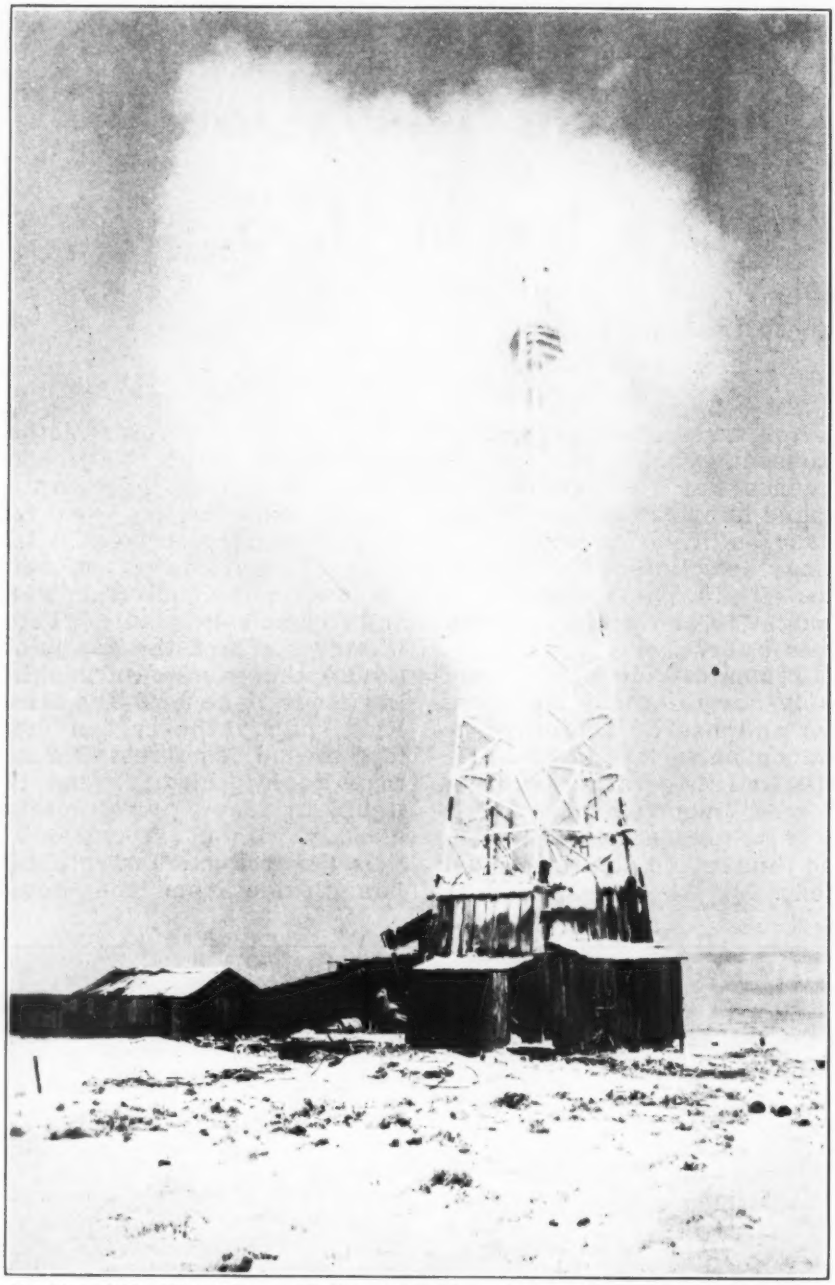
Carbon dioxide gas is relatively harmless and non-corrosive and has an inhibitive action on bacterial growth. Besides its refrigerating qualities, its most important characteristic is its tendency to kill germs and thus retard deterioration of foods.

The most important method thus far of producing carbon dioxide has been by burning coke. Other sources are fermentation tubs, cement kilns, power house flue gases, blast furnace stoves, natural wells and chemical plants. From whatever source the gas is obtained the process of making Dry Ice is, in general, the same: First, purify the carbon dioxide, second, compress the gas to a liquid; third, expand the liquid to "snow" or freeze it directly without expansion.

In the production of solid carbon dioxide from the liquid,



One of the wells near Walden, northern Colorado, which yields carbon dioxide gas. Note heavy coating of frost on pipe. The intense cold of the gas inside the pipe freezes the moisture in the air outside, winter or summer



Continental's "Ice Cream Well" at Walden, Colo. How the derrick looks in winter

two methods are employed. One which is used where flexibility of production is needed, consists of a double-walled tank of special construction set on scales. Liquid carbon dioxide is expanded into the inner tank through a specially designed nozzle, and, under suitable conditions, a remarkably high percentage of "snow" is obtained. The gas resulting from this sudden expansion and evaporation passes through a screen, often circulating between the walls of the tank and returning to the compressors to be liquefied again.

The snow is shoveled from this tank at intervals into molds and pressed under hydraulic pressure to 10-inch cubes. The other method consists of expanding the liquid in a larger tank of special construction set above a press. In this apparatus the snow is fed into the press, tamped, and pressed automatically.

There are several advantages in the automatic snow tank and press, and it is used where production warrants a large unit. There are two points of great importance in manufacture: First, the purification of the carbon dioxide, and, second, the yields of snow from the liquid.

Dry Ice is stored in well insulated pits, where evaporation is kept at a minimum and is delivered, wrapped in paper, by means of well insulated trucks. A large quantity of the product is shipped by express daily in balsa-wood boxes which hold 200 to 1400 pounds. In these the evaporation loss is less than 10 per cent in 24 hours.

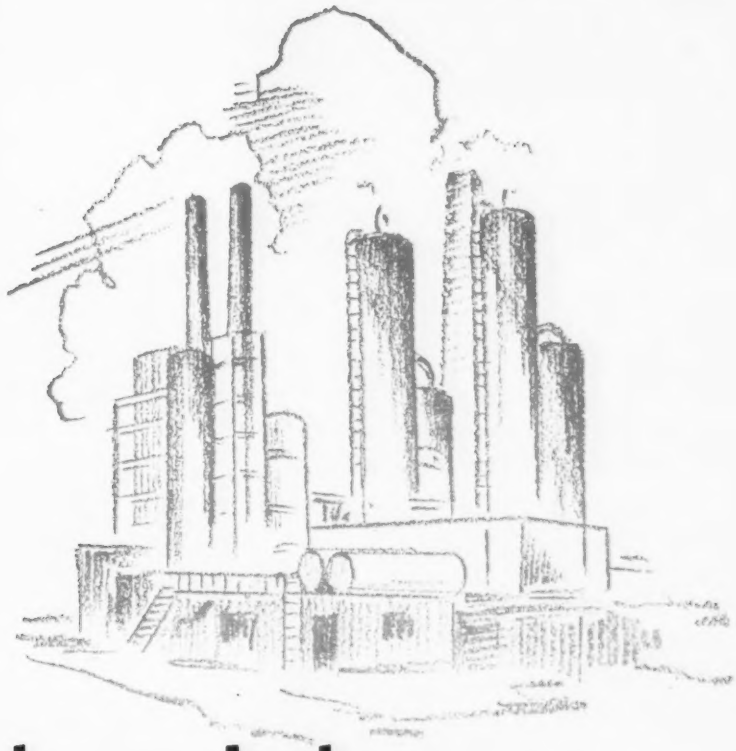
The question immediately arises, why was this product which was known for a generation never used commercially as a refrigerant. The answer is that as long as solid carbon dioxide was considered as refrigerating in the same manner that water ice refrigerates, that is by contact or by convection air currents, it had little or no commercial value, for its heat-removing qualities (negative B.t.u. content, as it is sometimes called) are less than twice that of water ice. For this reason it remained a laboratory curiosity for many years, and its commercial use started only with the discovery and full realization of the value of the off-coming gas as a means of insulating the refrigerant and the product to be refrigerated.

The commercial field for Dry Ice is not so much in the cooling of a product as in keeping it cold, either in some local storage or during shipment. Thus it can be seen that Dry Ice is likely not to become so much a competitor of water ice, but rather a means toward broadening and enlarging the present field of refrigeration.

Other advantages and improvements that have been found in practical value in using Dry Ice are: Readiness with which the manufacturer can control the temperature in the space to be refrigerated; regulation of the amount of insulation around the Dry Ice and regulation of control of the partial pressure on the Dry Ice both offer possibilities of automatic and of thermostatic control.

Because of its absolute dryness and its concentration of refrigeration, one use that was perfected in various forms is that of the refrigeration of perishable products in cardboard cartons. Even so perishable product as ice cream has

VIKING VIKING



Viking has «Grown-Up» with the Petroleum Industry

The history of the petroleum industry is likewise the history of the Viking Rotary Pump.

Entering the petroleum industry right at the beginning of its most phenomenal development . . the Viking has enjoyed the same remarkable growth during the past nineteen years.

The Viking Rotary Pump brought to the petroleum industry . . a new pumping principle . . a new standard of efficiency . . a new conception of trouble-free service . . and a new low scale of pumping costs. The industry has purchased scores of thousands of Vikings — because Vikings have saved hundreds of thousands of dollars for the industry.

We invite you to investigate the Viking before investing in either new or replacement pumping equipment. Write today for Viking catalog and Special Oil Bulletin.

Viking Pump Company of Delaware

Cedar Falls, Iowa

VIKING PUMPS

VIKING VIKING

Fit your new SULPHURIC ACID PLANT *to your special case*

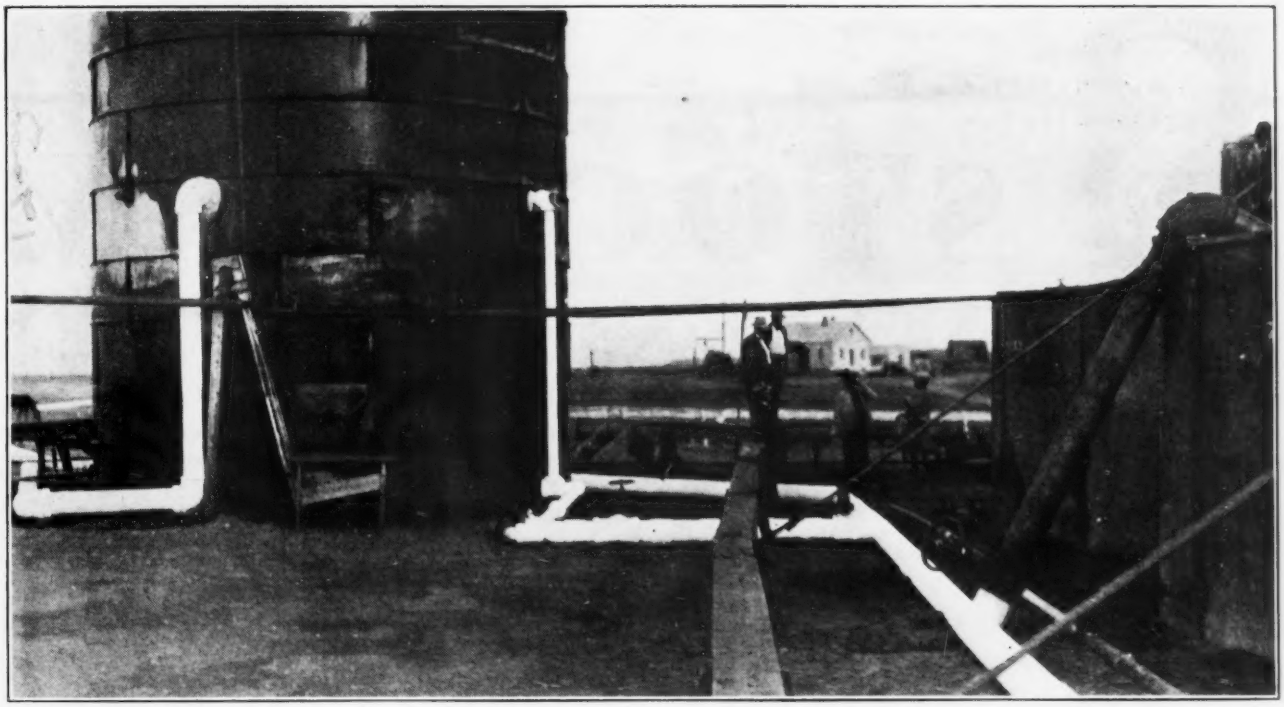
THE acid plant which you build must be adapted to your acid requirements or to those of your acid customers. Also, to obtain maximum economy in operation it must be adapted to your power conditions, to your water supply, and to a number of other factors which are peculiar to each locality.

Our first step in the design of plants for our clients is the collection and correlation of such data. Around this we then draw our plans— and the result is a smooth-running plant of which you will be proud. Best of all, such a plant costs no more than a "stock model."

Leonard contact plants use Monsanto Vanadium Catalyst, the first commercially successful vanadium catalyst licensed to acid manufacturers in the United States, and the merits of which have been proven in the successful operation of many plants in various parts of the world.

Profit by our experience. Write for our literature and complete information. Our estimate is based on conditions as they apply to your case. Ask us to figure with you.

LEONARD
CONSTRUCTION CO.
37 So. Wabash Ave.
CHICAGO, ILL.



All pipes connected to the carbon dioxide producing wells in North Park are covered with frost

been shipped from New York to Hood River, Ore., with this refrigerant. Butter, fresh meat, fish and even fruit are being shipped successfully with it.

The trend of today is toward packaged goods. The old fashioned butter-tub is replaced by the pound and quarter pound packages; the side of bacon is rarely seen, having given way to the box of ready sliced bacon; the 5-gallon can of ice cream is yielding to the pint and quart packages, and even these are cut into individual portions. In the field of packaged perishables, Dry Ice has unique place. Its convenience, cleanliness, small weight and volume and absence of moisture, add to its pre-cooling value and make it an ideal refrigerant. It is the modern mobile refrigerant for perishables that must be moved.

The output has grown steadily and rapidly. Starting as an aid to the ice cream business, it has spread into the fish, meat and fruit shipping fields.

When Dry Ice is used in exactly the same way that water ice is commonly used, it will have about twice the refrigerating effect of water ice. That manner of usage is incorrect. If properly used, so as to take full advantage of its peculiar qualities, a pound of Dry Ice will apparently do the work of 15 or 16 pounds of water ice.

Liquid carbon dioxide is used in certain types of fire extinguishers and in metal cartridges designed to loosen coal deposits in mines where it is used. When the liquid is discharged from the nozzle of a fire extinguisher under pressure it expands so rapidly that the oxygen content in the air in the vicinity of the fire is decreased to such an extent that it will no longer support combustion. The equipment for the non-explosive method of dislodging coal from the face consists of an alloy steel cartridge filled with liquid carbon dioxide and wired for an electric current. When the current is turned on heat is generated by certain chemicals which cause vaporization of the carbon dioxide and a gas pressure which shatters the seams of coal.

Such is the commercial purpose to which the Continental's wells, drilled for oil, will be put if present plans are carried out. There are two of them, the Sherman and the Peterson. They found the gas below 5100 feet.

Both made oil, although the Sherman produced the greater quantity. It was the discovery. Each produces a large volume of the gas, about 98 per cent pure carbon dioxide, which is so cold when it comes out that the crude oil reaches the surface in a frozen, slushy condition, having the appearance of lemon sherbet. The peculiarities of the Sherman well were described in NATIONAL PETROLEUM NEWS, July 13, 1927.

This will be the first time that Dry Ice is made from natural deposits of carbon dioxide. As the wells yield from 10 to 15 million feet daily each, there is plenty of material for processing.

Some day the Continental hopes to give the structure a real oil test. Deeper sands await exploration, but it is a difficult job to get below the sand which yields the carbon dioxide. Perhaps the deeper tests will have to await the exhaustion of the freak gas.

Invites 20,000 to Exposition

CLEVELAND, Sept. 18.—An invitation to attend the International Petroleum Exposition at Tulsa this year has been sent to 20,000 marketers and jobbers and to a large number of producers in both the United States and foreign fields by the Columbian Steel Tank Co. of Kansas City. The invitation occupied the front page of The Columbian Marketer, monthly sales promotion paper of the company.

STOCKHAM RETURN BEND

With a Stockham Return Bend (Header Box) you can obtain full life of expensive Alloy Tubes.

This construction covered by U. S. Pat. No. 1,752,331. This device is also covered by foreign patents.

See exhibit at the 7th International Petroleum Exposition in Tulsa, October 4th to 11th, 1930. *Booth Nos. 106 and 107.*

There is a Stockham Fitting for every oil requirement

ELECTRIC CAST STEEL—CAST IRON—MALLEABLE

STOCKHAM PIPE & FITTINGS COMPANY, *Birmingham, Alabama*

Eight-Stream Unit Solves Distillation Problems for Kendall Refining Co.

By Arch L. Foster

N. P. N. STAFF WRITER

BRADFORD, Pa.

A SINGLE distillation unit consisting of tube furnaces, fractionating tower, and the accessory condensers and heat exchangers has solved the problem of distillation of 3500 barrels per day of Bradford crude for the Kendall Refining Co., of Bradford, Pa.

This unit, designed and built by the Foster-Wheeler organization of New York, was completed and in operation last October. It handles all primary distillation in the plant for the production of five fractions from the crude, a job formerly handled by several stills of the older shell type. Provision is made in the tower of the unit for taking a total of eight cuts, but under present conditions only five are made, with sometimes a sixth cut when market needs require it.

This and similar refining units demonstrate very effectively the great strides in refining equipment and technology made during the last few years. In the last decade the older "rule-of-thumb" methods of improvement in apparatus and operating methods have given place to those involving the application of sound scientific chemical and engineering principles, with the result that petroleum refining has been practically revolutionized.

A large part of the credit for this advancement belongs to the several engineering organizations, large and small, whose efforts have resulted in making the application of these principles commercially practicable, and available to both large and small refinery organizations.

Referring to the flow chart, (Fig. 3) crude is pumped from storage through heat exchangers located on the overhead vapor stream, side streams and the bottom stream, preheating the charge before entering the pipe still which supplies additional heat to effect the desired vaporization. From the pipe still the charge passes through a transfer line to the fractionating tower which has provision for recovering gasoline overhead, side streams of naphtha, kerosine, gas oil, wax distillate, heavy wax distillate and cylinder stock bottoms. In normal operation the naphtha and heavy wax distillate are not used.

The gasoline vapors and steam taken overhead pass through the vapor heat exchanger and condenser from which they flow by gravity through a water separator where the condensed steam is removed. The liquid then

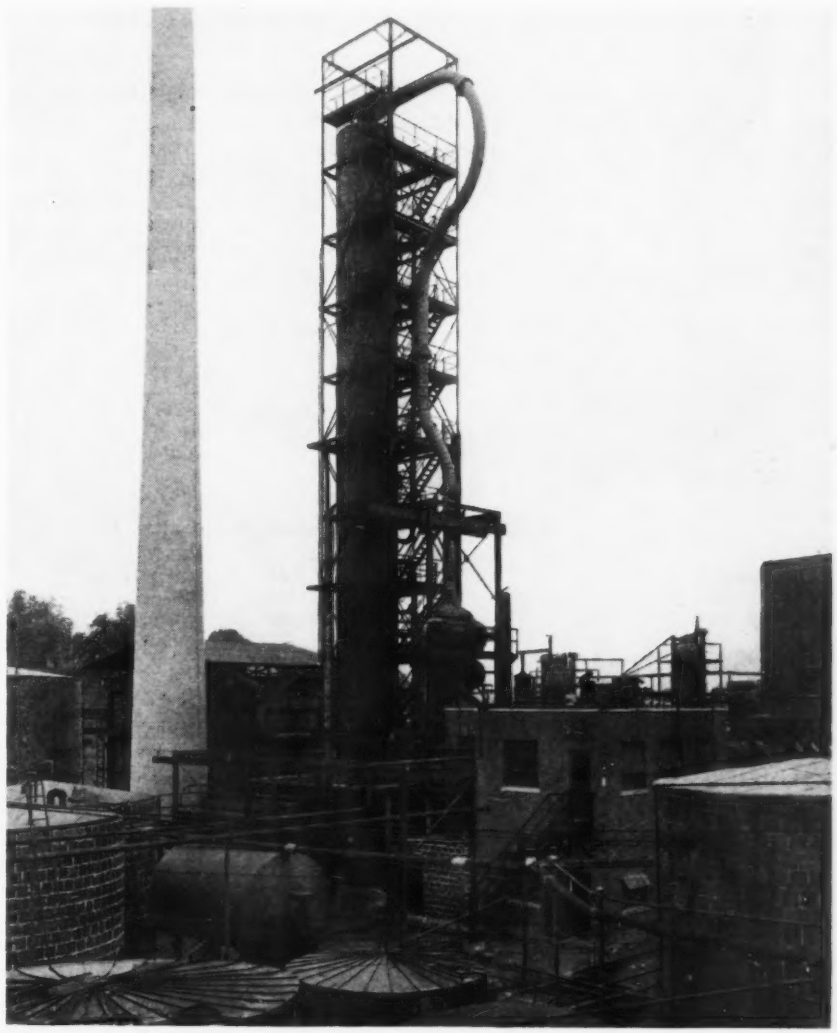


Fig. 1. Foster-Wheeler Unit at Kendall Refining Co.'s Plant At Bradford, Pa., With 110-Foot Fractionating Tower

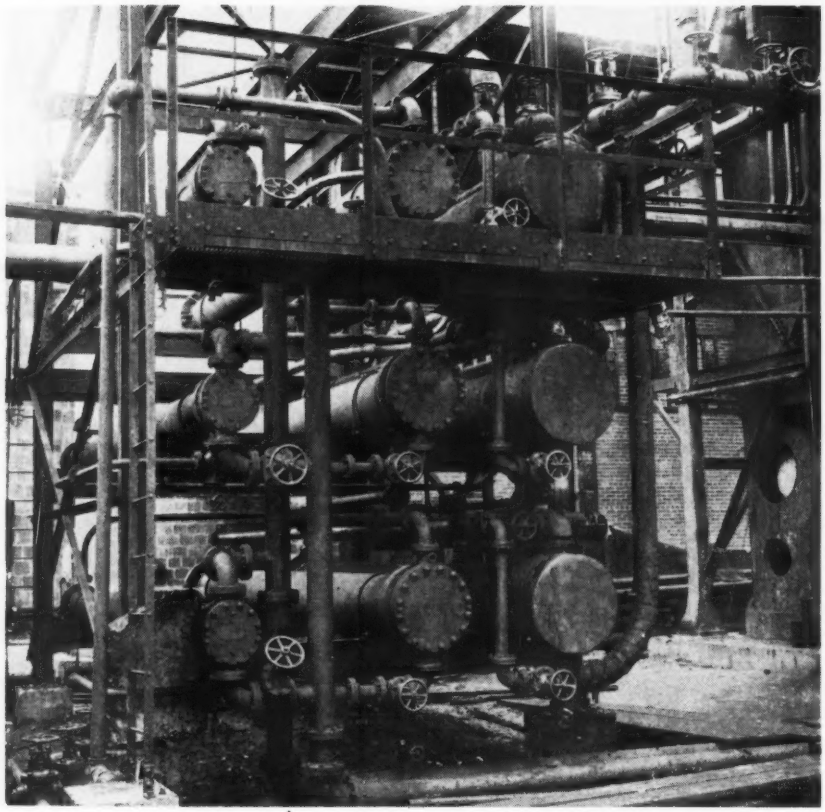


Fig. 2. Heat Exchanger Battery, With Water Coolers on Left

flows to a reflux tank and the final yield of gasoline flows through the look box in the receiving house. The reflux tank provides a supply of reflux and insures a positive head for the reflux pump.

The liquid side streams flow by gravity through the various heat exchangers and coolers, and thence to the look boxes in the receiving house. The cylinder stock bottoms are pumped from the tower through a heat exchanger and final cooler to storage.

The charging rate and the top tower temperature are automatically controlled and the heater outlet temperature is recorded by an electric pyrometer.

The specifications of the various streams are easily and effectively controlled by regulating the quantity of reflux with special type of weir control valves. Superheated steam used in the various stripping sections bring the different fractions to the desired initial boiling point specifications.

Details of Unit

The pipe still is approximately 25 feet x 27 feet x 29 feet high, constructed with steel members carrying the weight of the heating elements and roof independently of the brick setting which consists of 9 inches of fire brick and 13½ inches of red brick.

An air cooled bridgewall constructed of fire brick separates the combustion chamber from the convection bank. The roof consists of a suspended Bigelow flat arch covered by a galvanized corrugated sheet iron roof.

The convection bank consists of forty-eight 4-inch No. 6 gauge seamless steel tubes approximately 22 feet long fitted with patented extended cast iron surface which increases

Table 1

Typical Analysis of McKean County Crude

Specific Gravity, 0.823 — Baume Gravity, 40.1°.
Per cent sulfur, 0.10. — Per cent water, nil.

Distillation, Bureau of Mines Hempel Method

Air distillation, Barometer, 740 mm. First drop, 25°C. (77° F.)

Temperature	Per cent cut	Sum per cent	Sp. Gr. Cut	°B. out	Viscosity	Cloud test °F.	Temperature 1° F.
Up to 50	1.2	1.2	0.637	90.0	.....	.....	Up to 122
50 — 75	2.2	3.4	.666	80.2	.....	.....	122 — 167
75 — 100	4.4	7.8	.709	67.5	.....	.....	167 — 212
100 — 125	7.1	14.9	.730	61.8	.....	.....	212 — 257
125 — 150	6 3	21.2	.755	55.4	.....	.....	257 — 302
150 — 175	6.1	27.3	.769	52.1	.....	.....	302 — 347
175 — 200	5.2	32.5	.778	49.9	.....	.....	347 — 392
200 — 225	5.9	38.4	.790	47.2	.....	.....	392 — 437
225 — 250	5.7	44.1	.802	44.6	.....	.....	437 — 482
250 — 275	6.2	50.3	.813	42.2	.....	.....	482 — 527
Vacuum distillation at 40 mm.							
Up to 200	3.2	3.2	0.838	37 1	39	.....	Up to 392
200 — 225	6.2	9.4	.840	36.7	44	36	392 — 437
225 — 250	5.1	14.5	.848	35.1	54	55	437 — 482
250 — 275	5.5	20.0	.857	33.4	75	70	482 — 527
275 — 300	5.7	25.7	.867	31.5	115	86	527 — 572

Carbon residue of residuum—2.6%.

Approximate Summary

	Per cent	Sp. Gr.	°B.
Gasoline and naphtha	32.5	0.739	59.4
Kerosine	17.8	.802	44.6
Gas oil	9.4	.839	36.9
Light lubricating distillate	10.6	.853	34.1
Medium lubricating distillate	5.7	.867	31.5

the rate at which heat is absorbed by the oil from the gases.

Located in the convection bank is a steam superheater which superheats the necessary steam for processing in the tower. This superheater consists of sixteen 2-inch tubes which are also equipped with extended cast iron surfaces.

The radiant bank is located in the roof and consists of fifty-two 5-inch No. 4 gauge seamless steel bare tubes, approximately 24 feet long.

The fractionating tower which was shipped to the site in two sections, was riveted and welded together at the Kendall Plant before erection. It is approximately 8 feet 3 inches in diameter by 110 feet high. The shell is of ½-inch steel plate, butt strap riveted and electric caulk welded inside and outside.

As the cylinder stock bottoms only amount to approximately 18 to 20 per cent of the charge it was advisable to reduce the size of the bottom of the tower to four feet in diameter to decrease the time that the bottoms are exposed to the high temperatures.

The tower contains 48 cast iron bubble trays with rectangular vapor nozzles over which are individually supported steel plate bubble caps which cause the ascending vapors to come in contact with the liquid on the trays. Baffles are provided in the upper part of the tower to prevent entrainment of liquid.

The lower end of the tower ends in a dome or "pot," four feet in diameter, which receives the stripped cylinder stock bottoms, from which the latter is pumped to storage. Since the bottoms are only 18 to 20 per cent of the charge this diameter was reduced to shorten the time the bottoms are exposed to the high temperature.

Liquid level in the bottom is controlled by means of a Fisher air-actuated level control, regulating the speed of the draw-off pump by a valve in the pump steam line in the conventional manner. The overhead gasoline vapor line is connected to the top of the tower by means of another small "pot" 2½ feet in diameter surmounting the main shell.

The weir control valve diverts a portion of the reflux in the tower into a stripping section from which it is removed from the tower as a side stream. The setting of the weir valve is indicated by a pointer outside of the tower thereby giving the operator accurate knowledge of the valve position. (See Fig. 4). The weir control valves maintain a constant ratio of reflux flowing over the bubble trays to ascending vapors regardless of variations in normal operating conditions.

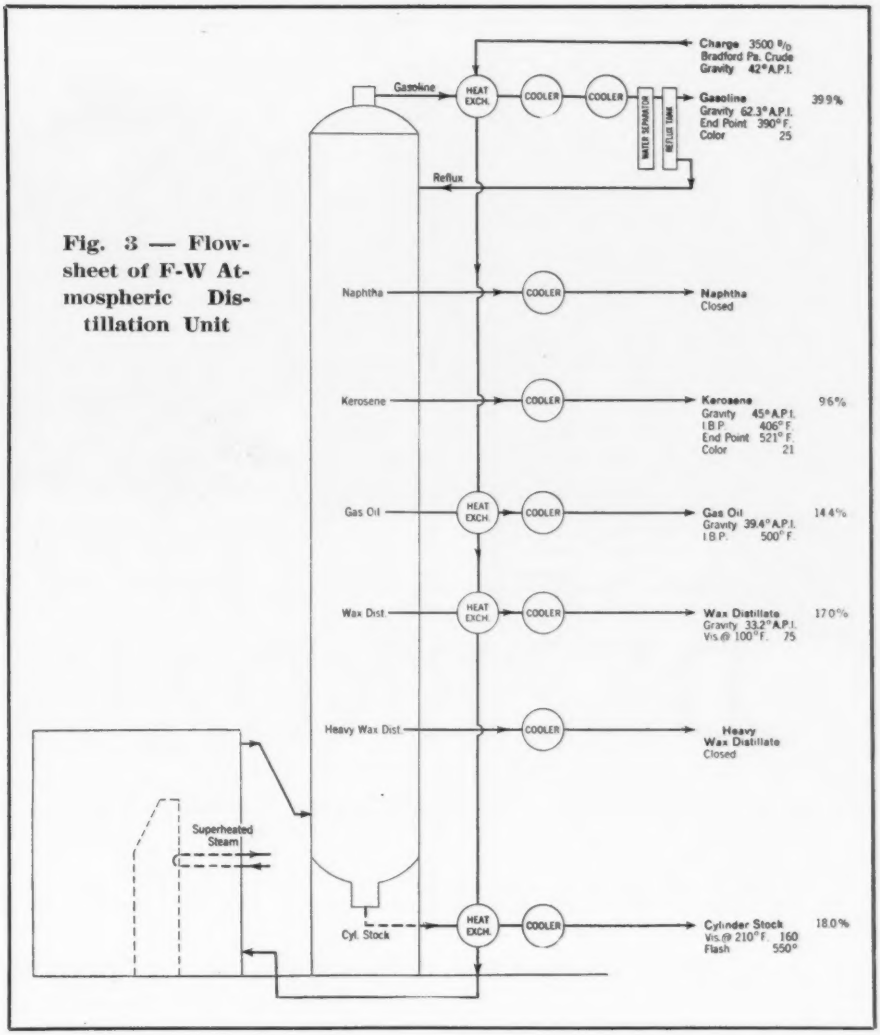


Fig. 3 — Flow-sheet of F-W Atmospheric Distillation Unit

All heat exchangers, condensers and coolers are of the shell and tube floating head type.

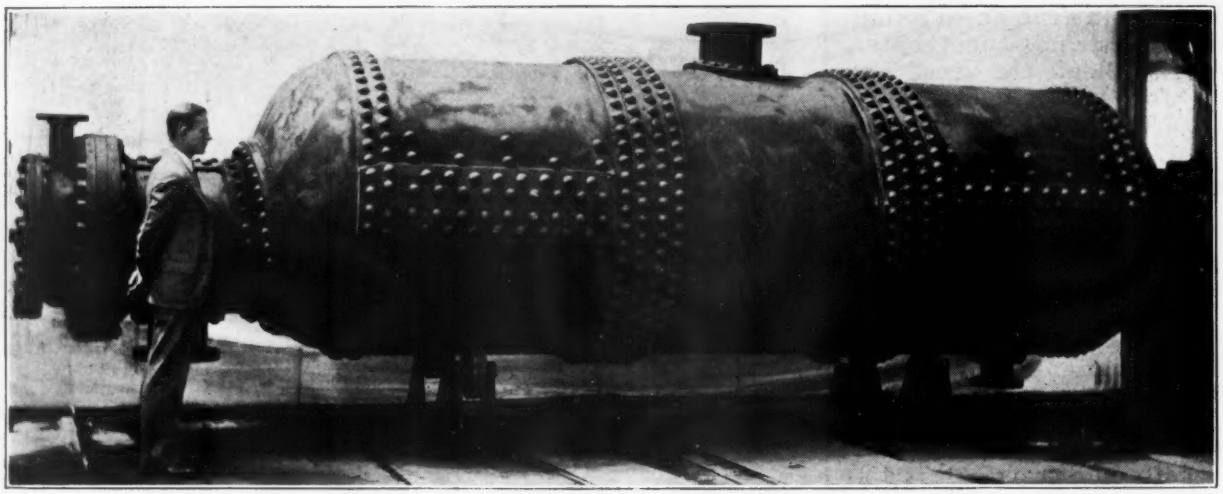
The receiving house contains at present six lookboxes, the side of the box being made of Pyrex glass cylinders about 12 inches in diameter by 12 inches high, through which the steams flow over a weir for observation and sampling. On the ground level below the receiving house the pumps are arranged.

Table 2

Yields from Bradford Crude Distilled in Foster-Wheeler Unit, at Kendall Refining Co., and Properties of Distillates

		Per cent yields				
		A	B			
		Taking off "wax slops," cyl. stk. to 600-flash	Cyl. stk. of 500 flash no "wax slops"	Properties, (A) Distillation		
Fraction	Gravity			I.B.P.	End Pt.	Viscosity
Gasoline	63.6±	42.3	40.3	93 F.	383 F.	
Kerosine	45.5—8	6.2	12.5	397	496	
Gas oil	40.0	16.0	13.9	490	678	
Wax dist.	34.4	17.7	20.2	.....	.....	74 @ 100 F.
Cyl. Stock bottoms	.....	17.8	17.5	(550-600 F. flash)		260 @ 210 F.

(Loss arbitrarily added to gas oil fraction).



DEPENDABILITY

ROSS EQUIPMENT IS DEMANDED
WHERE PRESSURES ARE HIGHEST
AND CONDITIONS MOST SEVERE

ROSS HEATER & MFG. CO., INC.

MAIN OFFICE AND WORKS . . . BUFFALO, N. Y.

NEW YORK
CHICAGO
PHILADELPHIA
ST. LOUIS
PITTSBURGH
HOUSTON

HEAT EXCHANGERS
CONDENSERS
HEATERS
COOLERS
REBOILERS
VACUUM CONDENSERS
STEAM JET AIR PUMPS
EXPANSION JOINTS

Six pumps are used in connection with the unit, including one standby for each service as follows:

National Transit Duplex charging pumps 12 x 5-½ x 12

Duplex reflux Pumps 7-½ x 6 x 10

Simplex Bottoms Pumps 6 x 5 x 12

The reflux pumps are equipped with constant pressure regulators.

The furnace is equipped to burn either gas, fuel oil, or both, and both fuels are employed most of the time. The gas burner is a Tate-Jones and the oil burner is made by the National Airoil Co.

The overhead temperature of the vapors is controlled by a Tagliabue recorder with a temperature scale range of 50 to 400 Fahr., regulating the reflux rate. The charging rate is controlled by a Foxboro 12-inch control, which regulates the steam admitted to the charging pump by a diaphragm.

Pressures are registered by Brown recording gauges. Two

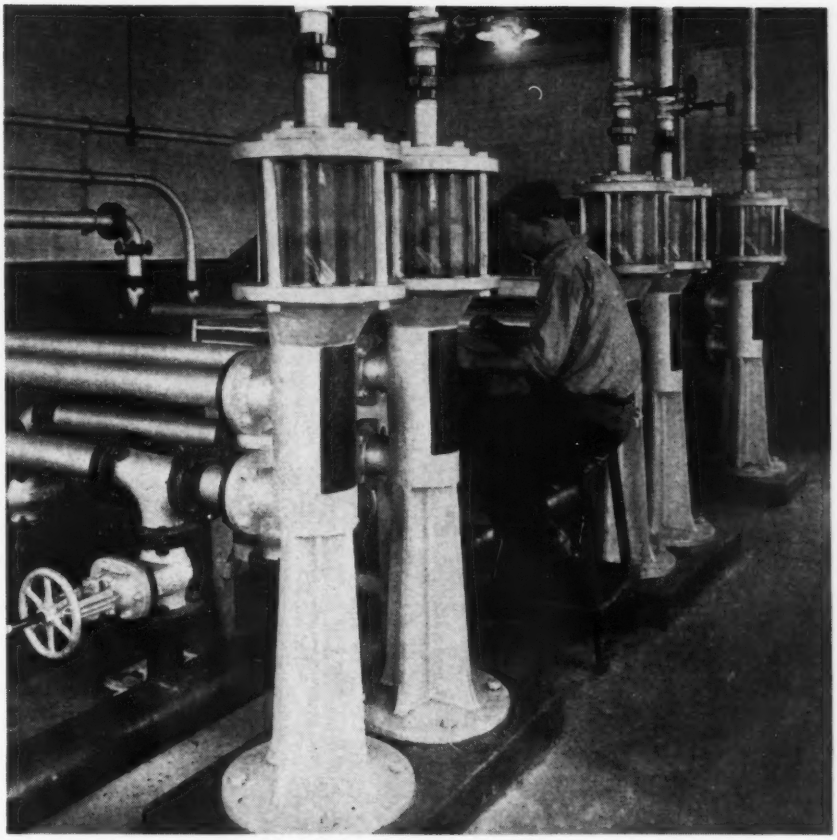


Fig. 5. Receiving House of Unit. Note Cylindrical Lookboxes of Pyrex Glass, The Simplicity and Accessibility of Valves and Piping

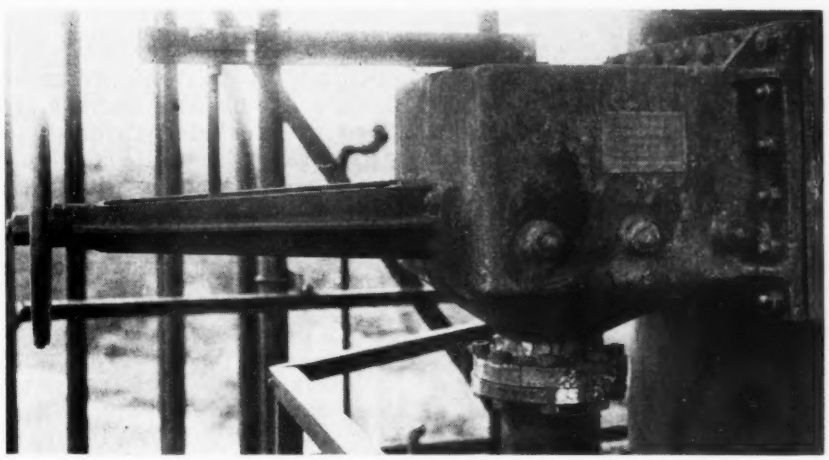


Fig. 4. Weir Valve, For Controlling Wax Distillate Side Stream

Leeds and Northrup two-point temperature recorders are employed, one recording the temperature at the top of the tower and the inlet to the furnace; the other records both the inlet and outlet furnace temperatures.

Operation of the Unit

As previously outlined, Bradford crude from coal fields is pumped from storage to the vapor heat exchanger directly above the two water condensers as shown in Fig. 1 where it receives heat from the downcoming gasoline vapors and partially condenses the latter. From this exchanger the crude passes in succession to the series of exchangers shown in Fig. 2, where it picks up more heat in turn from the streams of gas oil, wax distillate, heavy wax distillate or "slops," and the cylinder stock bottoms coming from the tower. It then passes to the convection bank of the tube still at a temperature of 340 to 350 Fahr., thence to the radiant bank, and on to the flash compartment of the tower at a temperature of about 700 Fahr. in the transfer line.

According to the estimate of the designers approximately 90 per cent of the crude is flashed in the tower, the heavy ends dropping to the bottom of the tower where they are stripped with superheated steam at 17 to 18 pounds pressure and about 700 Fahr.

The tower contains especially designed internal stripping sections into which a small amount of superheated steam is introduced to remove any undesirable lower boiling fractions from the streams. These internal stripping sections have a wide range of flexibility for regulating flash and initial boiling point specifications. No steam is admitted, however, to the wax distillate section, since too close stripping of this stream would result in troubles in the wax presses later on.

The gasoline or light naphtha stream passes overhead at a temperature of about 250 F. to the first exchanger, then to the two water condensers to complete the condensation of the naphtha and steam. The water is settled out in settling drums placed inside the pump house

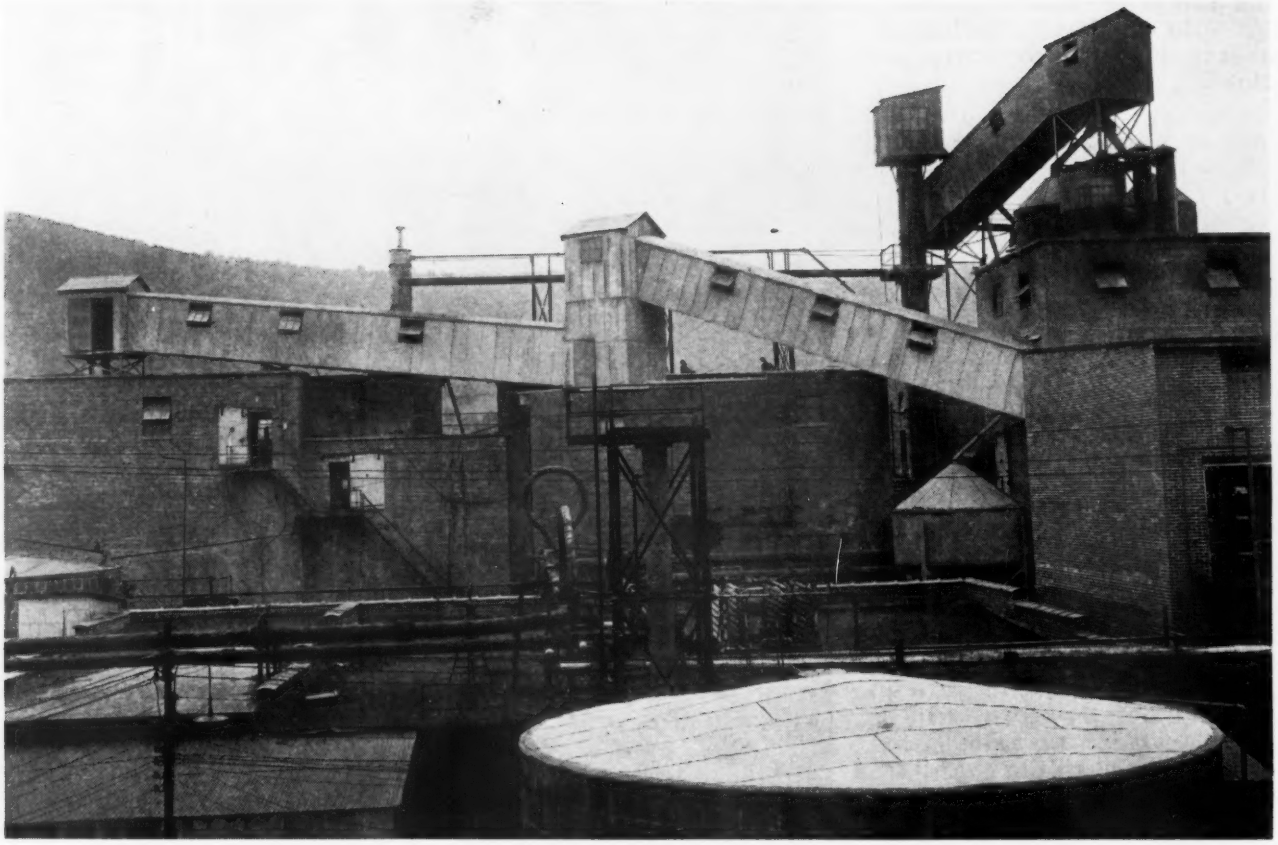


Fig. 6. Fullers Earth Enclosed Conveyor System Used in Plant. N-H Earth Burner Housed in Brick Building in Right Background

and equipped with sight glasses for observation and manuel control of the water level in the drums.

Side streams from the tower, after passing through the exchangers as previously outlined are condensed and pass to storage for further refining. Kerosine distillate is washed and rerun to specifications.

The gas oil is charged to two Dubbs units at around 1050 barrels per day, and cracked to yield 68 to 70 per cent of finished distillate, with a "benzol equivalent" of approximately 50 per cent. The coke yield is about 25 pounds per barrel of charge, and is sold for the manufacture of electrodes for aluminum electrolytic cells.

The wax distillate is chilled and pressed to remove the wax, which is decolorized by filtration through fullers earth, sweated in the conventional manner and sold principally for export, a portion, however, going to the domestic market. Cylinder stock bottoms from the tower are filtered, and centrifuged for the removal of the low melting wax. This wax from the centrifuges is combined with the gas oil and charged to the cracking units.

Table 2 shows the approximate yields obtained from the unit and the properties of the various distillates as shown by laboratory tests.

The furnace of the distillation unit is fired chiefly by gas from the cracking units, which are run regularly to coke, producing practically enough gas to fire the still under the normal rate of charging. Since the gas from the cracking stills is not metered, no data are available to show the fuel economy obtained with this fuel. Data have been obtained, however, when firing the unit with oil fuel, which show that the consumption is less than 3 per cent of the charge, or a maximum of 3150 gallons of fuel per day when running to full capacity.

As operated at present, no naphtha side stream is taken from the tower, nor is wax slops or heavy wax distillate taken, normally. When heavy wax distillate is cut from the bottoms, as is done when 600 flash bottoms are wanted, the slops are recycled through the still. Otherwise bottoms of 550 flash are obtained, which specification meets requirements for the major portion of the cylinder stock manufactured at the plant.

One other interesting feature of the plant is the system for handling spent fullers earth. Used earth is conveyed by a belt system to the 10-hearth Nichols-Herreshof burner, where it is burned to remove oily material. At the bottom of the burner it is picked up by bucket conveyors, then by belts by which it is carried overhead to storage bins, from which it is fed by gravity as wanted into the filter cylinders. From the bottom of these cylinders the spent earth is picked up and carried again through the cycle. The conveyors are enclosed, the appearance of the overhead portion of the system being shown in Fig. 6, through which the fresh earth is carried to the bins above the filter house.

CALORIZED STEEL
Unretouched Photomicrograph x 100
① Aluminum Oxide
② Aluminum-Iron Alloy (Rich in Aluminum)
③ Iron-Aluminum Alloy (Rich in Iron)
④ Mild Steel Base
DEFEAT
CORROSION —
specify
CALORIZED TUBES
The rugged iron-aluminum surface alloy, an integral part of the steel, converts ordinary steel tubing into a reliable, low priced cracking still tube immune to interior sulphur corrosion and exterior oxidation.
Calorized tubes do not become brittle in cracking still service.
SEE OUR EXHIBIT AT THE INTERNATIONAL PETROLEUM EXPOSITION
THE CALORIZING COMPANY
WILKINSBURG STATION « » PITTSBURGH, PA.

KELLOGG

Kellogg Products include Welded Boiler Drums, Receivers, Separators, Headers and Complete Power Plant Pipin

Announces..

.... a New and Superior Electric Arc Welding Process

THIS NEW METHOD of electric arc welding, developed by the Kellogg Engineering Staff, assures absolute soundness of deposited metal, freedom from shrinkage cracks, perfect union of welded sections, and the elimination of included oxides. The deposited metal has high tensile strength, ductility and elongation. Alternate bending impact tests are not surpassed by any other method of welding.

The Kellogg method of electric arc welding is applicable to the fabrication of all types of pressure vessels where exacting requirements are to be met, from small diameter receivers of $\frac{3}{8}''$ wall thickness, up to the largest soaking drums of $3\frac{1}{2}''$, or greater, wall thickness. Shells of vessels can be fabricated entirely of plate, or of Kellogg rolled seamless cylinders. In the case of both types the ends are usually closed with ellipsoidal shaped dished heads. Sizes are only limited by transportation facilities.

We invite inquiry, and will furnish full details promptly

The M. W. KELLOGG COMPANY

225 BROADWAY NEW YORK, N. Y.

Birmingham, 827 Brown-Marx Building; Boston, 12 Pearl Street; Chicago, 1 La Salle Street; Pittsburgh, Oliver Building; Los Angeles, 742 Western Pacific Building; Tulsa, Philtower Building

New Refining Patents

Cracking Oils. U. S. P. 1 769 788, 1 769 789 and 1 769 790, July 1, 1930, applications filed Nov. 4, 1921, June 26, 1925 and May 1, 1926; William G. Leamon.

THREE separate but related improvements are specified in cracking hydrocarbon oils. The first relates to effective utilization of a cooking still for making either gasoline or heavier distillate, such as naphtha, from crudes or relatively heavy petroleum distillates. To do this the oil is distilled down to pitch or coke, heavier portions of the distillate being continuously returned to the still while the lighter portions pass to a cracking chamber in which the conditions are adjusted according to the character of the light distillate wanted. Tarry residue from the cracking chamber is also returned to the still.

In the second invention the oil is heated to vaporize a desired portion, which is separated from the liquid, rapidly superheated, and contacted with a solid porous adsorptive agent to effect the cracking reaction.

The third invention provides a means of temperature control for improving the efficiency and economy of continuous liquid phase cracking. The temperature is that which has been ascertained to be the optimum with respect to ratio of production of fixed gas to yield of light (cracked) distillates. The pressure of the fixed gas produced in the cracking operation is utilized to actuate the temperature regulating means, so that the temperature control is automatic.

What is Claimed

1 769 788: Distilling a body of oil to heavy residue, cracking the distillate at not much above 600 degrees C. in a cracking chamber filled with a porous contact mass inert to sulfur and nitrogen, returning tarry products from the cracking chamber to the still, and fractionating the cracked vapors.

1 769 789: Heating vapor from a cracking stock above the cracking temperature in such a short time that no carbon is deposited, and contacting it without further addition of heat, in a heat-insulated cracking chamber, with a porous contact mass.

1 769 790: In cracking oils in a continuous process, utilizing a quantitative measurement of the rate of flow of the residual gas to regulate the heating operation and thereby to control the rate of production of fixed gas, according to a predetermined desired value.

* * *

Refining Hydrocarbons. U. S. P. 1 768 683, July 1, 1930, application filed Nov. 12, 1926; Thomas T. Gray, Assignor to Gray Process Corp.

THE inventor, in an earlier patent (U. S. P. 1 340 889), disclosed a method of refining cracked distillates by catalytic vapor phase polymerization of the unsaturated components. This treatment, however, does not sweeten the product; in the case of sour distillates an after-sweetening with plumbite or a hypochlorite is necessary.

Catalytic sweetening with the aid of metal salts has hitherto been tried; but the product tends to revert to its sour state, apparently because of a side reaction which re-converts to mercaptans the disulfides formed in the sweetening step.

It has now been found that if copper acetate or mercuric acetate is used as the catalytic sweetening agent this side reaction does not occur and the product remains sweet, non-corrosive, stable to light and free from gumming tendency.

The improved process was developed primarily for re-running cracked distillates, in conjunction with the vapor phase catalytic method of removing unsaturated hydrocarbons; but it can be used equally well with any petroleum oils or distillates contaminated with sour sulphur compounds, whether or not such oils are also treated for removal of unsaturated hydrocarbons.

What is Claimed

Refining a hydrocarbon product containing sour sulphur compounds and unstable hydrocarbons by distilling in presence of a metallic acetate which forms additional compounds with the sulphur compounds, and contacting the vaporized product with a solid adsorptive catalyst.

* * *

Topping Plant, U. S. P. 1 768-965, July 1, 1930, application filed Feb. 18, 1922; Stephen Schwartz, Assignor to Doherty Research Co.

THIS invention relates to an improved distillation plant for topping crudes, e. g. the type known as "Kansas crudes", with highly efficient heat utilization and without superheating or cracking of the oil. An essential feature is that the application of heat is intermittent, and during each heating stage the oil is confined to prevent vaporization. Between heating stages the pressure on the oil is released and vapors are withdrawn; the oil is then distilled with steam.

This arrangement combines the advantages of steam distillation with those of intermittent heating and vapor withdrawal. By condensing the vapors separately after each heating stage, and recombining the uncondensed portions, quite close fractionation of the topped distillates is possible in a single distillation.

Further novel features are specified in the manner of rerunning the separately condensed primary distillates; in heat economies effected by exchange of heat between the incoming crude oil and the va-

COPIES of United States Patents can be obtained at 10 cents each, payable to the Commissioner of Patents, Washington, D. C. Coupons, good until used, are sold in books of 100 at $10. Photostat copies of foreign patents (if not of too recent date) can be obtained from the Commissioner of Patents at prices (payable in coupons if desired) which will be quoted on application.

CAPACITY
FOR MASSIVE CONSTRUCTION

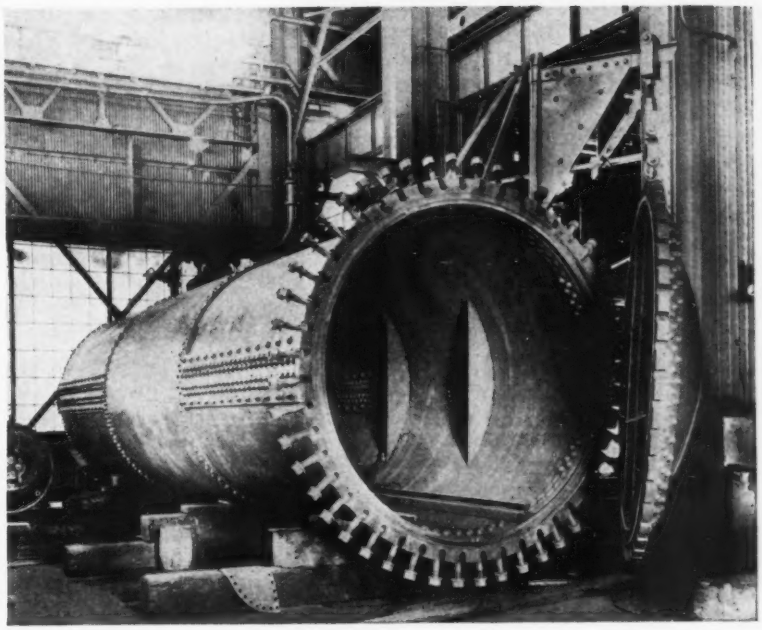
WE ARE EQUIPPED for massive construction and quantity production. Our facilities permit us to build in our shops at one time numerous pieces of equipment of large proportions.

TOWERS
STILLS
CONDENSERS
HEAT EXCHANGERS
TANKS . . .

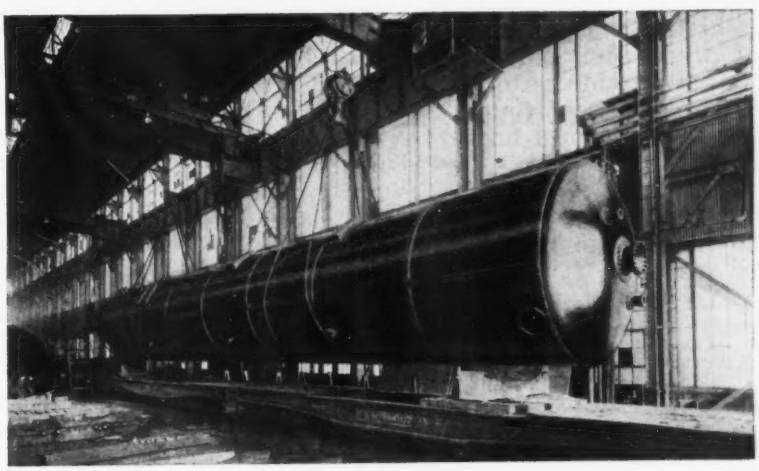
SPECIAL HEAVY BUILT TANKS . . .
RIVETED AND WELDED CONSTRUCTION

STILL BOTTOMS
ANGLE WORK
FABRICATED
PLATE WORK

Rail or Water Shipments
Estimates on Request



IMPREGNATOR SHELL



TOWER—13′ 4″ DIAMETER x 95′ HIGH—WEIGHT 250,000 LBS.
HANDLED AND SHIPPED IN ONE PIECE

SUN SHIPBUILDING & DRY DOCK CO., Chester, Pa.

pors from the primary distillation; and in the apparatus for heating and vaporizing the oil, condensing the vapors and rerunning the primary distillates. Seven sheets of drawings illustrate the apparatus features of this improved topping plant.

What Is Claimed

Oil distilling apparatus comprising a furnace, a heater coil mounted therein, an upright exhaust flue, a chamber around a portion of the flue, outwardly projecting baffles on the flue within the chamber, inwardly projecting baffles within the chamber, vapor outlets for the chamber, and means for passing hot oil from the coil to the upper baffles in the chamber.

* * *

Vacuum Distillation. U. S. P. 1,771,385, July 22, 1930, application filed Sept. 6, 1927; Philip Subkow, Assignor to Union Oil Co. of California.

TO OVERCOME the disadvantage of back pressure, which prevents efficient use of fractionating columns for the recently developed processes of high vacuum distillation of lubricants and the like, an apparatus has been designed which permits control of the vacuum in successive chambers of a fractionating column.

Since each plate, in a fractionating column of the bubble plate type, contributes its share toward the total back pressure, the new apparatus is provided with a sufficient number of separate vacuum pumps to evacuate each chamber to the desired degree.

To permit the operation of successive bubble plates under different degrees of vacuum, there is interposed between each bubble plate and the next lower plate an imperforate plate; connection for passage of liquid from one bubble plate to the next is provided by vertical downcomer tubes, which pass through the imperforate plates. For efficient vacuum fractionation of lubricants or like oils, the tower is operated in such a way that the vacuum becomes successively less from one bubble plate to the next.

What Is Claimed

Rectification in vacuum by contacting vapors with partial condensates in successive stages at increasing sub-atmospheric pressures.

* * *

Refining Cracked Distillates. U. S. P. 1,771,350, July 22, 1930, application filed Oct. 25, 1923 and renewed Oct. 12, 1928; Alexander S. Ramage, Assignor to Gyro Process Corp.

THIS invention is directed toward efficient removal from cracked gasoline and like distillates of the objectionable impurities (sulfur compounds, acetylenic hydrocarbons and diolefines) without depriving the gasoline of the olefines therein present. The new method depends on chemical precipitation of the undesired component or components. It is not limited to use of any one reagent nor to removal of any one impurity, but specifies broadly the removal of any component or group of components for which a suitable reagent and reaction medium can be found.

As applied to refining of cracked gasoline, 4 steps are specified in a preferred sequence for gasolines containing the 4 impurities; sulfur compounds, acetylenic hydrocarbons, diolefines, resins or gums. These steps are: 1) precipitation of sulfur by adding an alcohol solution of an alcohol-soluble lead compound, e. g. lead acetate or nitrate, or sodium plumbite; 2) precipitation of acetylenic hydrocarbons by adding a properly adjusted quantity of a copper compound in alcoholic solution; 3) precipitation of diolefines by a properly adjusted quantity of mercuric chloride, nitrate or acetate in alcoholic solution; and 4) agitating the oil with caustic soda and a small amount of water to precipitate resins and gums.

What Is Claimed

Purifying an oil containing sulfur, diolefines, acetylene hydrocarbons, olefines and resins by removing most of the sulfur with an aqueous lead compound, removing the last traces of sulfur with a lead compound in alcoholic solution, removing acetylene hydrocarbons with an alcoholic solution of a copper compound, removing diolefines with an alcoholic solution of a mercury compound, and removing resins with alcoholic caustic soda followed by washing with water.

* * *

Distilling Oil. U. S. P. 1,771,705, July 29, 1930, application filed Oct. 26, 1926; John C. Black.

AS A means of continuous fractionation of petroleum distillates at lower temperatures than have been hitherto required, lighter fractions of the desired finished gasoline (coming from the stripping still) are utilized in the bubble tower as a carrier for the heavier fractions. This is accomplished by injecting the lighter vapors at a relatively high point in the fractionating tower, thus doing away with some of the steam heat otherwise required.

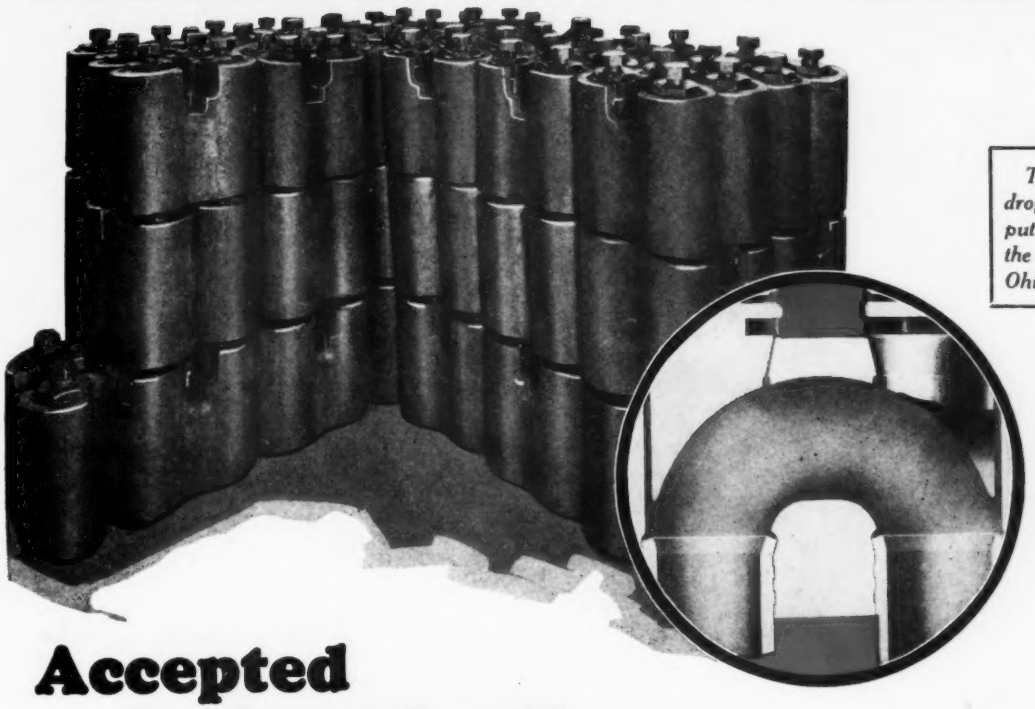
In this way the formation of hydrogen sulfide and of unsaturated hydrocarbons is lessened, since formation of these objectionable substances is favored by high temperatures.

As an example, crude oil is heated to about 200 degrees Fahr. in an analyzer, raised successively in heat exchangers to about 300 degrees Fahr., and evaporated in a still, in which only as much steam is added as is required to act as a carrier. The residual oil, cooled by the evaporation to about 200 degrees Fahr., is heated in coils to about 550 or 600 degrees Fahr., and evaporated in an evaporator to form a fuel oil fraction. The gas oil fraction is condensed in a bubble tower, in which the utilization of the lighter components as carrier is carried on.

What is Claimed

Continuous distillation of hydrocarbons by passage in heat exchange with residual vapors, a condensate and an unvaporized fraction of the subsequent distillation; vaporizing and fractionating these preheated hydrocarbons in a tower to separate the lighter fractions, passing the higher boiling residue through hot coils, vaporizing a portion to leave an unvaporized fraction, fractionating the vapor to form the above-mentioned condensate and residual vapor, injecting the lighter vapor into the last fractionating unit and thus assisting in the vaporization of the heavier hydrocarbons.

BENDS by "OHIO"

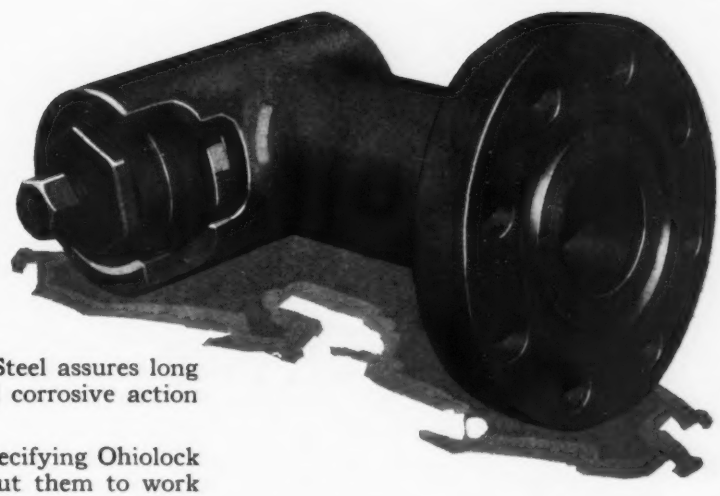


Turbulence and pressure drop is reduced and throughput increased 15% to 20% by the "Frictionless" feature of Ohiolock Return Bends.

Accepted As Standard!

Many leading refineries are specifying Ohiolock Frictionless Return Bends as standard equipment for their pressure units.

. . . and if you would subject these fittings to the same severe tests and trials, you too, would find them worthy of being listed as standard.



The Ohiolock Closure—a simple and positive locking device, easily opened and quickly closed, reduces tube cleaning time; the Frictionless free flow feature increases throughput 15% to 20% and Hi-Steel assures long service by its resistance to the erosive and corrosive action of hot oil.

These are the advantages you get by specifying Ohiolock Frictionless Return Bends as standard. Put them to work for you now!

The Ohio Steel Foundry Co.

Springfield, Ohio

FAHRITE HEAT RESISTING ALLOY

SALES OFFICES
Chicago ..... 1313 Peoples Gas Bldg.
Detroit ..... 304 Blvd. Temple Bldg.
Houston ..... 410 Union Nat'l Bank
Los Angeles ..... 2800 S. Alameda St.

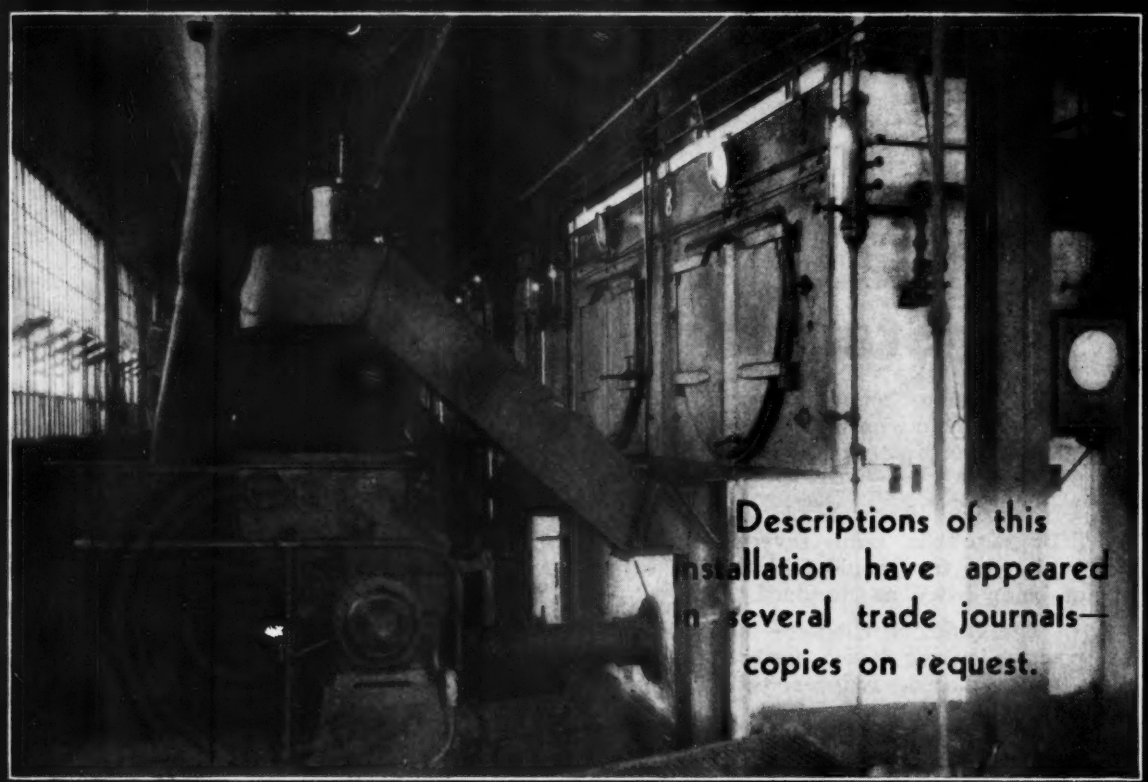
Plants In
Lima, Ohio - Springfield, Ohio
Bay City, Mich.

SALES OFFICES
Philadelphia ..... 22 So. 15th St.
Cleveland.....1510 Terminal Tower Bldg.
New York ..... 75 West St.
Tulsa ..... 422 Wright Bldg.

PULVERIZED PETROLEUM COKE AT PARAGON REFINING CO.

GULF REFINING COMPANY

PREPARED BY THE UNI-PULVO SYSTEM HAS PROVEN ITS MERITS IN THIS PRE-EMINENT PLANT!

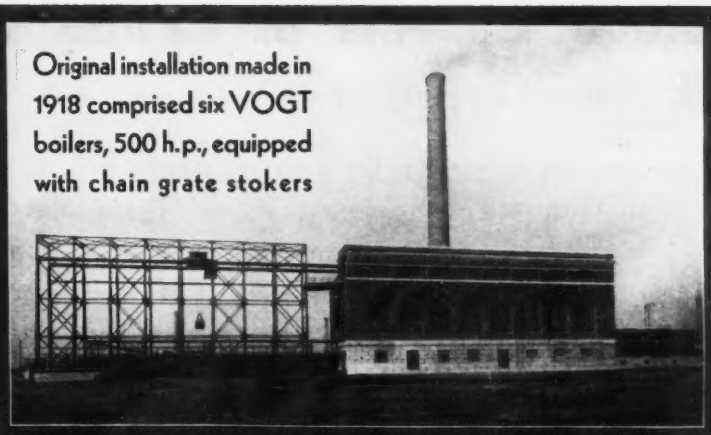


See Exhibit of the UNIPULVO UNIT PULVERIZER
for petroleum coke — or coal — in Booths 94, 95 and 96

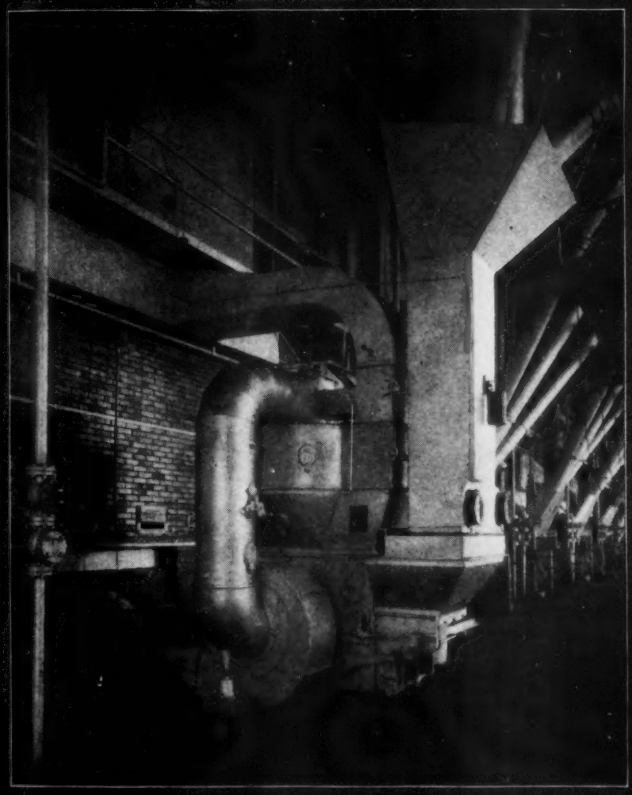
INTERNATIONAL PETROLEUM EXHIBITION
Tulsa, Okla., Oct. 4-11, 1930

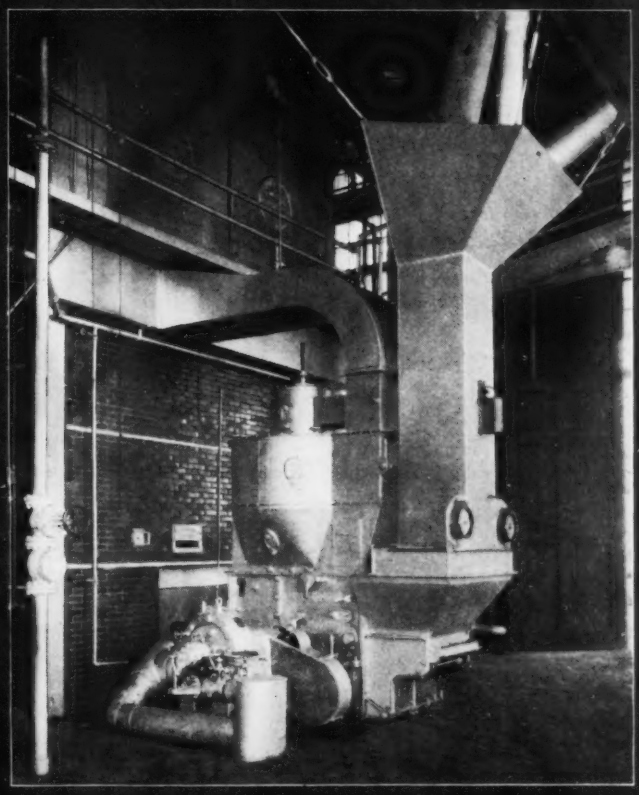
THE STRONG-SCOTT MFG. CO.

Minneapolis, Minnesota . . . . . Toronto & Winnipeg, Canada



Original installation made in 1918 comprised six VOGT boilers, 500 h.p., equipped with chain grate stokers





STANDARD OIL CO. OF OHIO

have installed in their Toledo Refinery the first UNIPULVO unit pulverizer for burning petroleum coke or bituminous coal

UNIPULVO WINS ITS OWN WAY

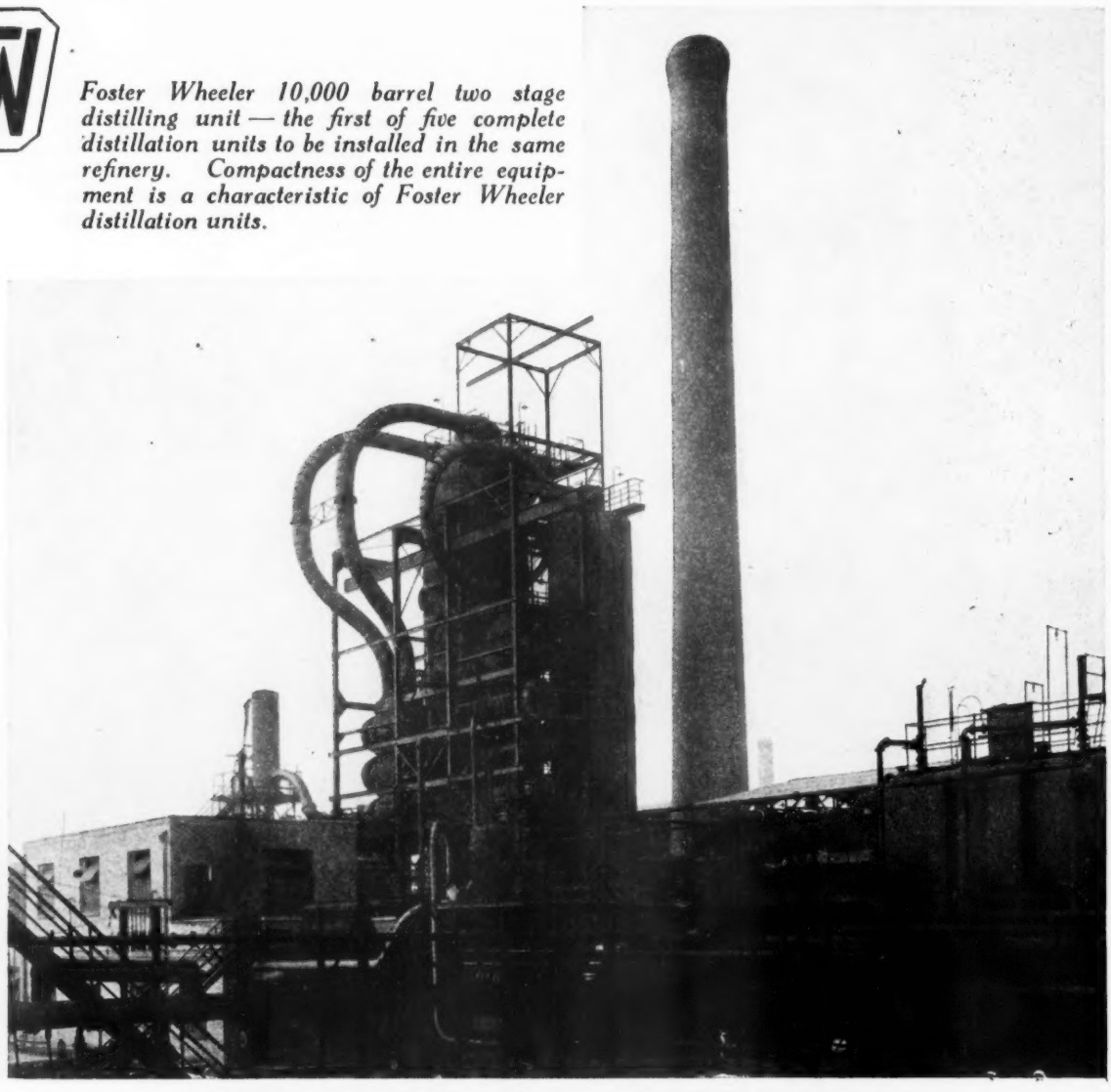
THE STRONG-SCOTT MFG. CO.

Minneapolis, Minnesota . . . . . Toronto & Winnipeg, Canada

50,000 Barrels of Crude Per Day Capacity

A large oil refinery has recently adapted a program for running 50,000 barrels of crude per day. Five, two stage, atmospheric and vacuum units will be used for the distillation of the crude.

The first Foster Wheeler unit is shown in the accompanying illustration. The design of the equipment represents the latest practice, using tubular heaters and high vacuum for the manufacture of superior products. The construction is sturdy and dependable, assuring maximum time on stream.



Foster Wheeler 10,000 barrel two stage distilling unit — the first of five complete distillation units to be installed in the same refinery. Compactness of the entire equipment is a characteristic of Foster Wheeler distillation units.

FOSTER WHEELER CORPORATION

165 Broadway, New York, N. Y.

Foreign Associates: Foster Wheeler Limited, London, England
Societe Anonyme Foster Wheeler, Paris, France
Foster Wheeler Limited, Toronto—Montreal, Canada

Branches in Principal Oil Centers

FOSTER WHEELER

10,000 Kw. Is Steam Plant By-Product At Gulf's New Power Plant

By E. B. Severs*

BY INSTALLING a 10,000 kw. steam turbine between the high pressure boilers of its new steam plant, the turbine exhausting steam at 125 to 150 pounds pressure, The Gulf Refining Co. solved the problem of supplying the plant with low pressure process steam and additional electrical energy. In this way both purposes were served with a minimum installation of boiler capacity, to meet the increased demands for both process steam and electricity made by the greatly expanded plant.

This expansion is now practically completed, and includes two 14,000-barrel Foster-Wheeler distillation units, a tar stripping still, removing the last traces of light materials from cracking still bottoms, several batteries of cracking stills of the Buerger type, and other less important additions to the Port Arthur plant. This plant is now one of the largest refineries in the world, if not the largest.

The boilers installed to meet this two-fold need of the expanded plant are designed to operate at a drum pressure of 535 pounds gauge, with superheaters which raise the steam to a total temperature of 635 F. As the use of higher pressures would have required the employment of much heavier and more expensive equipment, such as forged boiler drums and extra heavy piping, valves, etc., it was decided that the additional power would not be as economically produced at these higher

*United Engineers & Constructors, Inc.

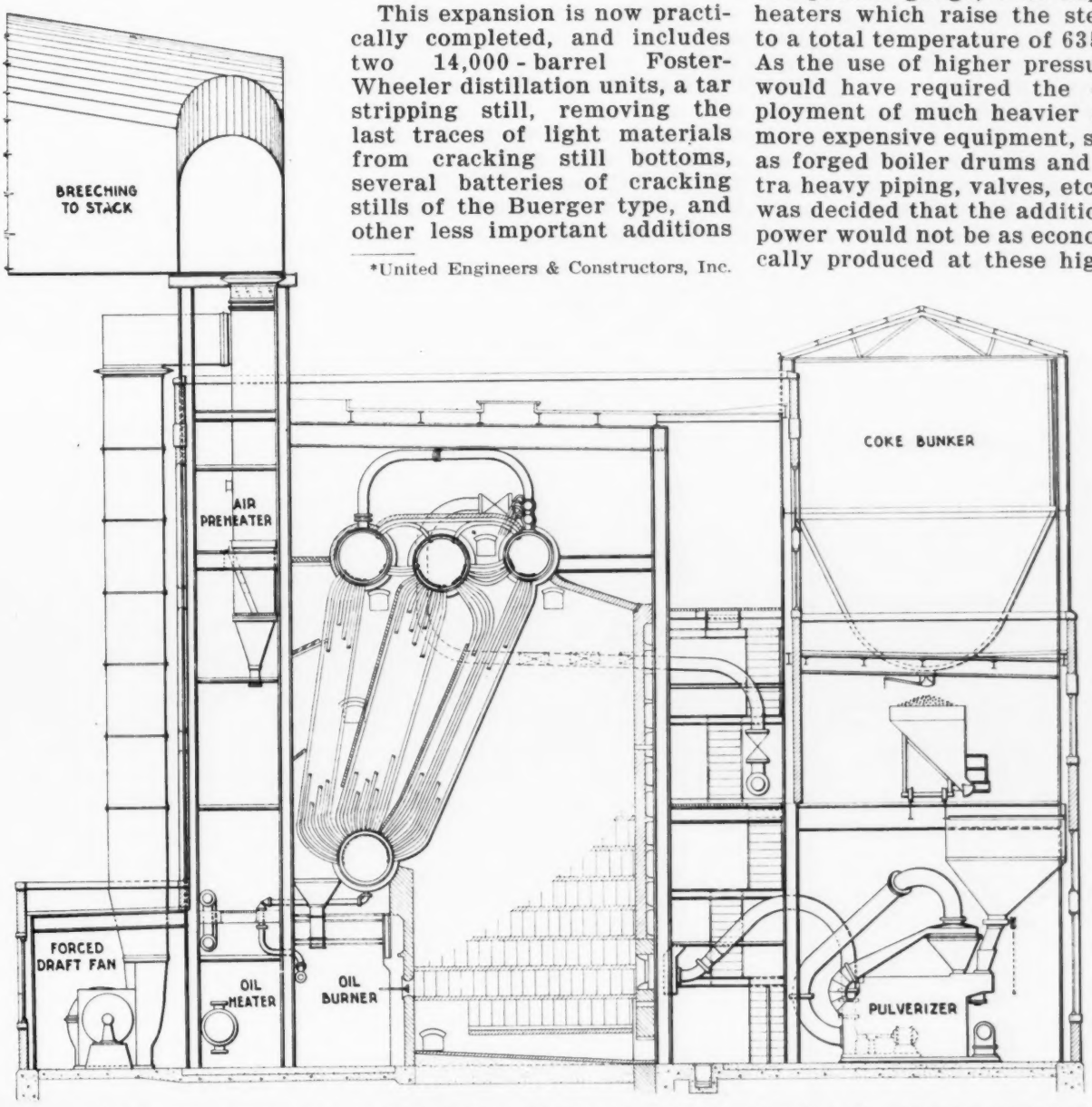


Fig. 1—Gulf's new steam plant at Port Arthur, showing method of preheating air, and arrangement of coke handling equipment

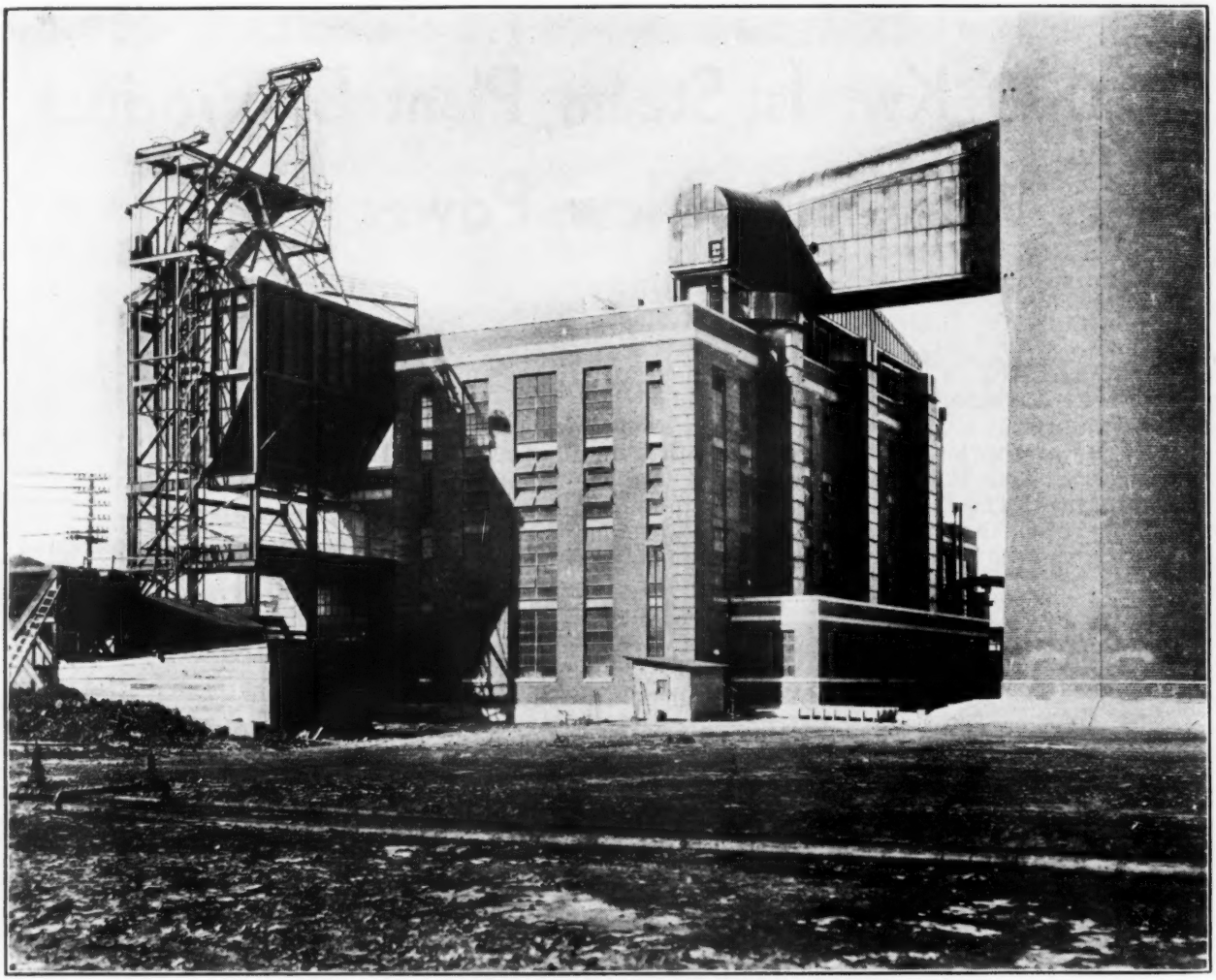


Fig. 2—Forced draft air-ducts leading to air preheaters

pressures as at the conditions mentioned above.

The turbine is designed to operate with a throttle pressure of 525 pounds per square inch gauge and 635°F. total steam temperature and to exhaust at from 125 to 150 pounds per square inch gauge. This turbine will produce from 21 to 26 kw.-hr. for every 1000 pounds of steam passed through it, the amount depending upon the load on the generator. The heat consumption in fuel per kw.-hr. is about 4500 B.t.u.

The additional amount of process steam required by the expanded plant showed that nearly 10,000 kw. could be produced by the set, and a turbo-generator of this size was therefore purchased for the installation. To provide for periods when the turbine might be out of service for repairs or other reasons or the electrical load might not be sufficient to allow the passage of the amount of steam required for process work a by-pass with reducing valves and desuperheater was provided. This by-pass is automatically regulated so as to maintain the desired steam pressure in the process steam system regardless of the turbine operation.

Although the plant is laid out so that eventually four boilers may be installed without disturbing the present setup, present requirements made it advisable to install only three boilers. One of these can be down for repairs or cleaning without disrupting operation of the plant, the other two being able to carry the peak load at somewhat increased ratings. The boilers are of 15,400 square feet each, operating normally at approximately 250 per cent of rating.

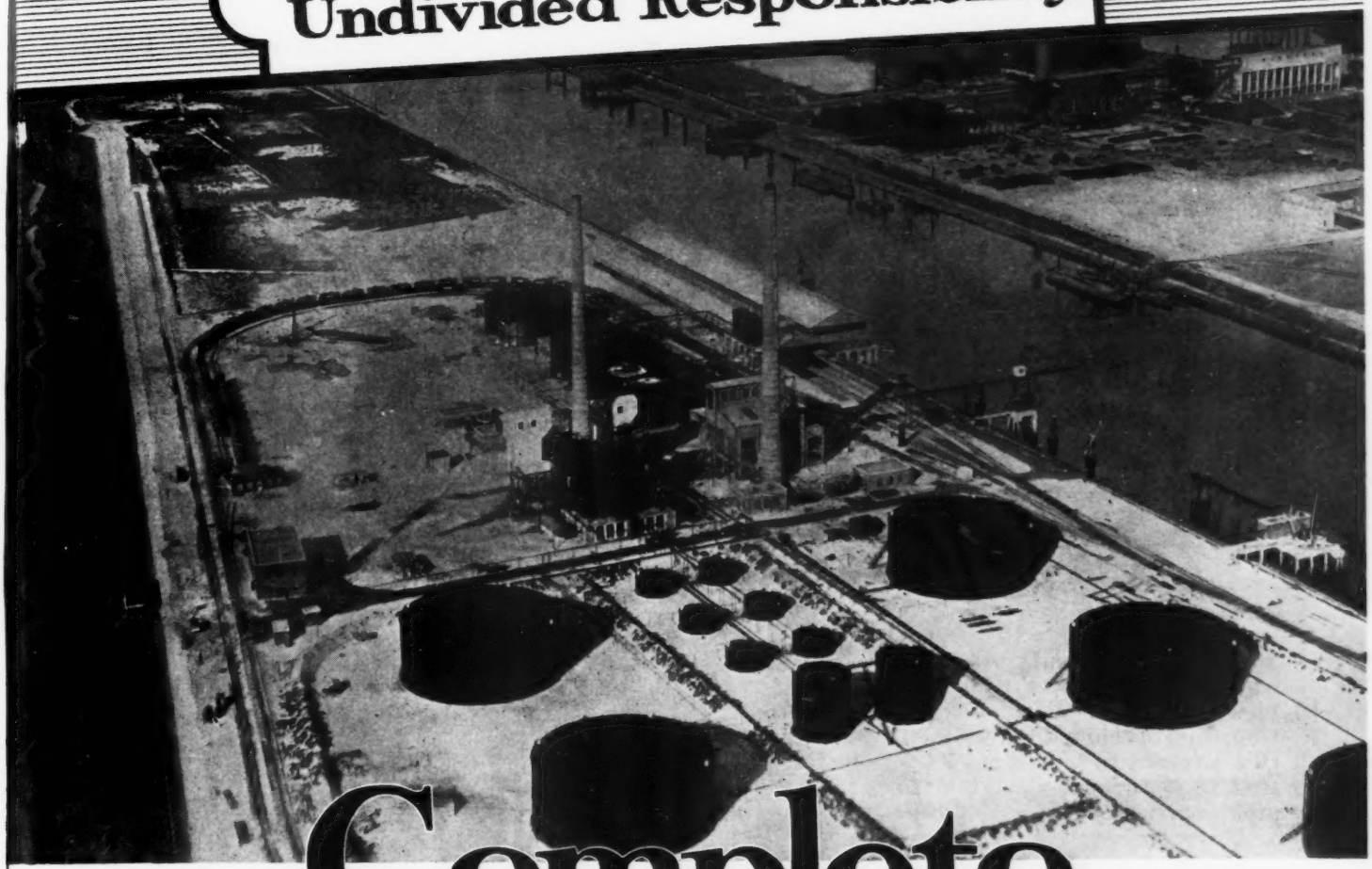
The boilers are equipped to utilize either pulverized or liquid fuel, and as at present installed one is provided with oil burners while the other two burn either powdered paraffin coke or fuel oil, or both if desirable.

Paraffin coke has a heating value of about 14,000 B.t.u., per pound at the burner, is remarkably free from ash and, when properly manufactured is a desirable fuel in many respects. It is, however, rather low in volatile matter, very abrasive, and its pulverization is attended with difficulties, especially when its physical properties vary from time to time, or when foreign matter is permitted to become incorporated in the coke.[1]

Investigation of the achievements of pulverizer manufacturers and results obtained with coke in actual service, it was decided to pulverize the coke in ball mills and to burn it using preheated air, to offset the disadvantage of the low volatile content. In this way furnaces could be constructed to utilize

[1]See article by D. O. Lima, in NATIONAL PETROLEUM NEWS, July 30, 1930, page 81. Also one on Coke Burning at Paragon plant, Feb. 19, 1930, page 64—Editor.

Coördinated Design
Undivided Responsibility



Complete
From Plan to Product

Airplane view of 6000 barrel refinery for the production of nine grades of specification asphalt and specification overhead products at Hamburg, Germany. Designed and erected by Arthur G. McKee & Company.

REFINERY additions or complete refineries are handled by the integrated McKee organization, consisting of the Process Design, Engineering Design, Purchasing and Forwarding and Construction Divisions.

Each division is so trained and coordinated as to move forward along the most direct and approved lines to insure accuracy, economy, speed, and ultimate operating efficiency.

ARTHUR G. McKEE & COMPANY
ENGINEERS AND CONTRACTORS

CLEVELAND, OHIO

London, England, Bush House, Aldwych, W. C. 2

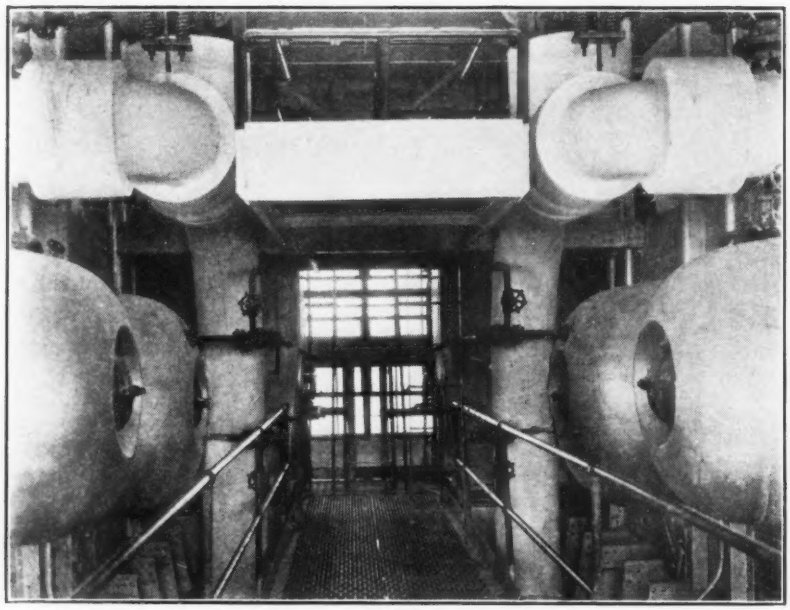


Fig. 3—Boilers Nos. 1 and 2, and walkway between

two available fuels to the best advantage, coke and oil. This construction increases the flexibility of the heating installation, and avoids the inefficiencies incident to burning a liquid fuel in a furnace designed for stoker-firing.

A representative proximate analysis of paraffin coke is the following:

Volatile matter	11.01%
Fixed Carbon	88.57
Ash	0.42
Moisture	6.89

Heine boilers of the four-drum, bent-tube type are employed, a portion of the arrangement being shown in Fig. 3. Fig. 4 shows the arrangement of the two coke-fired boilers and the pulverizing equipment. The oil burning furnace is identical but for the omission of the coke burners.

Combustion air is preheated by being drawn through the space provided in the furnace walls for air cooling these walls; then underneath the furnace bottom and to the forced-draft fans. These fans drive the air through the preheaters and thence to the burners where it aids in forcing the fuel into the furnace as well as supplying the oxygen for combustion.

As petroleum coke contains practically no ash, no ash hoppers are provided. The boiler furnaces have flat bottoms, and such refuse as accumulates is raked by hand into a sluicing trench which runs along in the floor in front of the boilers.

ground. The coke is brought to the plant in trucks, dumped on the ground and then placed in the hopper with a tractor or locomotive crane. From this hopper the coke passes through a crusher and feeder to the skip hoist which elevates it to the storage bunker. This bunker which is located outside the building has a capacity of about 300 tons. A small crushed coal bunker is located in front of each boiler to which coke is delivered from the main storage bunker by an electrically operated car.

The arrangement of the coke pulverizers, piping, exhausters and burners is clearly shown in Fig. 4. There are two burners, each with its own pulverizer and exhauster for each boiler.

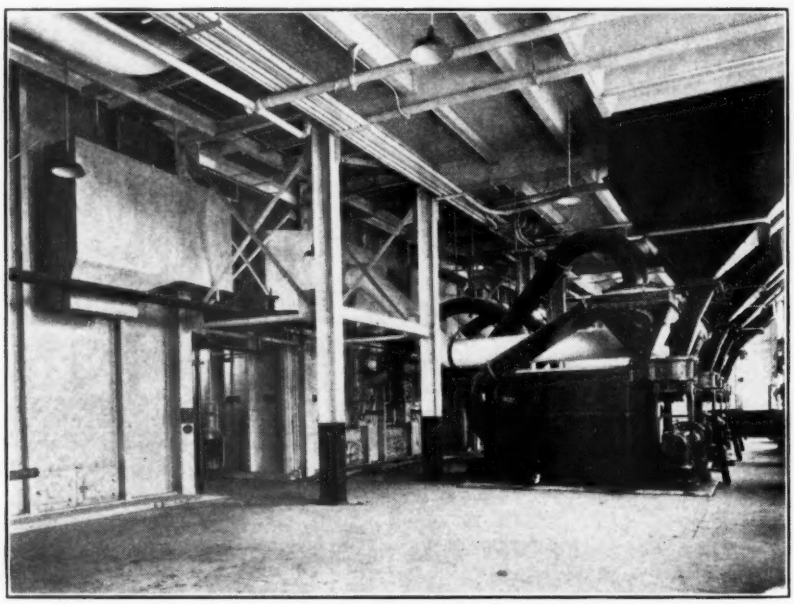


Fig. 4—Coke pulverizing equipment, which supplies two of the three boilers with fuel

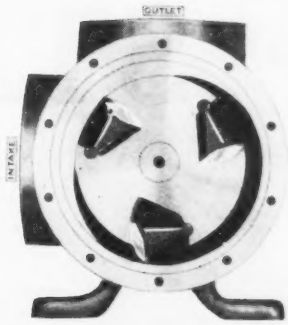
Because of the extreme fire hazard in an oil refinery a high stack is desirable in order to minimize the likelihood of hot sparks falling to the ground. This condition led to the consideration of natural draft for the plant. Comparisons were made and it was found most economical to construct a stack 400 feet high which would create sufficient draft for the furnaces. This stack is constructed of radial brick and is of sufficient size to take care of an additional boiler.

The coke handling and preparation system consists first of a receiving hopper located above

Each pair of pulverizers and burners has a capacity sufficient to develop 250 per cent rating on the boiler.

The fuel oil system consists of the oil pump, heater and heat exchanger and 11 burners of the mechanical atomizing type for each boiler.

All of the steam from this boiler plant goes to uses of a nature that precludes the return of condensate to the boilers and all water for the boilers must therefore be treated. The water available in this district contains a considerable quantity of suspended matter which is practically in colloidal form.



BLACKMER SUPREMACY IS ACKNOWLEDGED

THE simple, efficient Blackmer "bucket" design was born nearly thirty years ago.

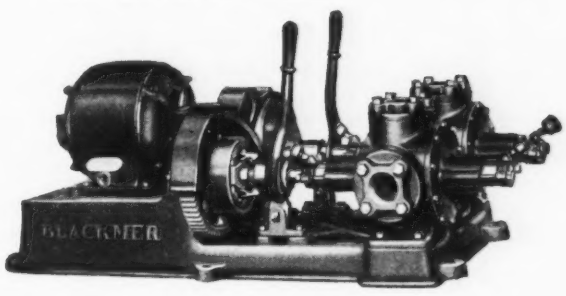
Today, there are more Blackmer Rotary Pumps in the fields where they operate—delivering more thousands of gallons, every hour, every day,—than any other.

WITH the mounting years, Blackmer leadership has mounted, too. Only after many years of service do comparisons have true significance. Then it is that Blackmer Rotary Pumps come into unquestioned preference — unchallenged choice — acknowledged leadership.

NOT only do Blackmer Rotary Pumps handle more gallons—but, as has long ago been proved, they handle More Gallons Per Dollar. The utter simplicity of the operating principle saves wear, saves power, saves repairs, saves shut-downs, saves replacement cost.

BY *choice* of buyers, by *preference*, by *experience*—Blackmer occupies the peak of Supremacy—a place earned by those contributing SUPERIORITIES of design, construction, life-expectancy, and merchandising facilities, which includes twenty-five branch offices and stock points in the United States and Canada.

WRITE to the acknowledged leader in its field for sound facts on the problem of pumping "more gallons per dollar."



BLACKMER ROTARY PUMPS

"More Gallons Per Dollar!"

Blackmer Pump Company

1801-B Century Avenue—Grand Rapids, Michigan, U. S. A.

Another STANDARD

THE Plum-Jeff Oil Company, Fort Worth, Texas, has just put into service one of the most economical steel bulk haul trains in the Southwest.

This unit, shown above, is another of the STANDARD STEEL WORKS giants plying the Texas highways. It consists of a 2650-gallon drop-frame semi-trailer tank and a 1750-gallon straight-frame trailer tank. The trailers are by Fruehauf; a 5-ton truck powers the unit.

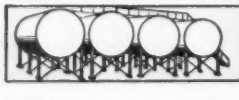
The unusnal gallonage obtained in this steel unit *through STANDARD STEEL WORKS design and construction* affords a particular economy for the Plum-Jeff Oil Company because of the length of the haul—Fort Worth to Wichita Falls, Texas, a distance of 125 miles one way.

STANDARD STEEL equipment includes everything for the transportation and storage of petroleum products . . . both steel and aluminum truck tanks and trailer tanks, bulk storage tanks, service station equipment, etc.

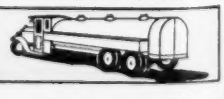
We have an interesting story for you on the economy of STANDARD Truck Tanks. Complete information on other STANDARD Products is also available. Just mail the coupon.

THE STANDARD STEEL WORKS
North Kansas City, Mo.

ORIGINATORS OF ALUMINUM TRUCK TANKS



Standard Steel Works



Giant for Texas Highways!

ORIGINATORS OF THE ALUMINUM TRUCK TANK!

ALL-ALUMINUM truck tanks, bulk-haul units, semi-trailers, etc., are also available . . . thanks to the ingenuity of STANDARD STEEL WORKS engineers who originated the aluminum truck tank. Aluminum construction decreases dead weight by 50%, increases payload capacity 20% to 30%. For competent assistance in solving your petroleum transportation problems you are encouraged to mail in the attached coupon.

Standard Steel Works
No. Kansas City, Mo.

Please send me your literature on items checked:

☐ Aluminum Truck Tanks ☐ Bulk Haul Equipment
☐ Steel Truck Tanks ☐ Bulk Sta. Equipment
☐ Filling Station Equipment

Name .....

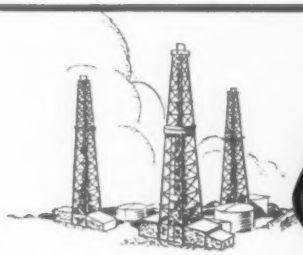
Company .....

Address .....

INDEPENDENT BRIGHT STOCK

Has Every Quality Feature

- 1 LOW CARBON CONTENT
- 2 HIGH FLASH AND FIRE
- 3 THOROUGHLY DE-WAXED
- 4 ABSOLUTE PURITY
- 5 MAXIMUM VISCOSITY
- 6 LOW VISCOSITY INDEX
- 7 LOW COLD TEST



JOBBERS! . . . if you are compounding your own motor oils, get the facts on INDEPENDENT Super "D" BRIGHT STOCK. Quality unsurpassed measured by every point of comparison! A low cold test, low-carbon, de-waxed, heat-resisting product made from specially selected paraffin-base Mid-Continent crude.

With INDEPENDENT Super "D" BRIGHT STOCK as a basis, you are assured a finished product of good quality. Try this extra-quality bright stock once and you'll see the difference. It's the choice of many leading jobbers . . . . and has been for years.

For a full line of high-class finished lubricants choose INDEPENDENT "10-Test" *De-Carbonized* Oils. They sell and they satisfy!

We are in a position to handle your requirements in bright stock or compounded oils promptly and efficiently. Write or wire.

INDEPENDENT OIL AND GAS COMPANY

PRODUCERS ❖ REFINERS ❖ MARKETERS

Minneapolis Omaha TULSA Des Moines Kansas City TJ-23

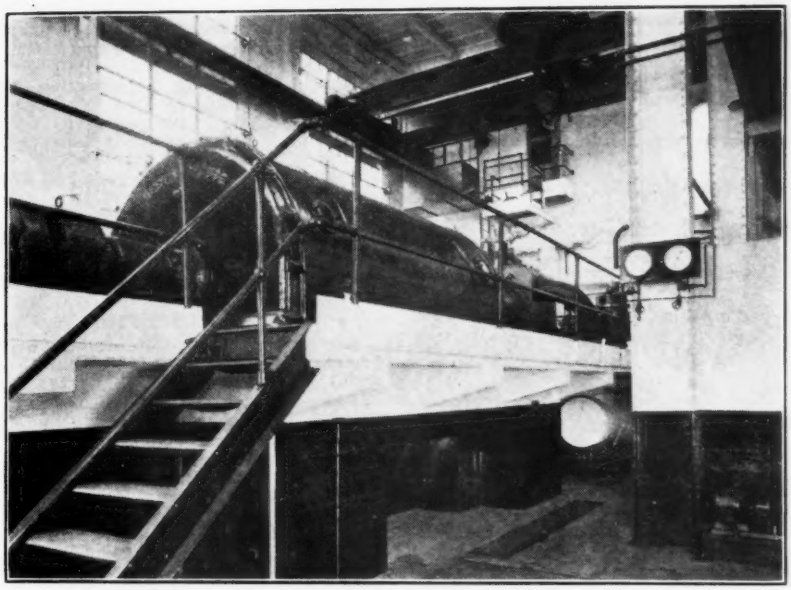


Fig. 5—10,000 Kw. Westinghouse turbine. Operating on superheated steam at 525 pounds per square inch and 635 F., exhausting at 125 to 150 pounds pressure

The Gulf Refining Co. has installed a central treating plant for all boiler water used at the Port Arthur plant. The water is first given an alum treatment to coagulate the solids and then filtered and treated by the Zeolite process. Secondary treatment at this boiler plant insures the desired carbonate-sulphate ratio.

With the 100 per cent treated feed water it is necessary to use a continuous blow-down system. The blow-off water from the boilers at a temperature of about 475°F. is passed through a heat exchanger wherein its temperature is reduced to about 100°F. by the incoming boiler feed water. This heat exchange raises the temperature of the incoming feed water under normal conditions from 80° F. to about 118 ° F.

The feed water is then heated in a de-aerating type heater and fed to the boilers at a temperature of about 350° F. Steam for the feed water heater is taken from the turbine exhaust at about 150 pounds per square inch gage.

There are two main boiler feed pumps, one motor and one turbine-driven and an additional turbine-driven pump for emergency service. This latter pump is arranged to deliver cold water from the storage tank to the boilers in case of failure of the normal feed water supply system. The turbine-driven pumps take steam from the high-pressure boilers and exhaust at 125 to 150 pounds pressure into the process steam header.

The two main boiler feed pumps each have a booster pump mounted on the same bedplate and driven through the same shaft. These booster pumps receive water from the treating system and deliver it to the feed water heater at a pressure of about 165 pounds per square inch gauge. For emergency service a by-pass connection around the feed water heater is provided so that the boiler feed pump may take water directly from the booster pump suctions.

The 10,000 kw. generator which is driven by the non-condensing turbine referred to above feeds into a 2300-volt system on which are two other generating stations. The presence of these two other stations makes it possible to control the load on the turbine so that it will always supply the demand for process steam needed by the refining operations.

Ground was broken for this plant on June 3, 1929. On November 5, 1929 steam was brought to full pressure on the plant and sent to the processes through the reducing valves and desuperheater. On December 1, 180 days after breaking ground, the turbine was started and the plant put in regular operation. The plant was designed and built by United Engineers & Constructors Inc.

Tests have been conducted recently to determine the performance of the boilers when burning pulverized coke. Some of the more important results are given below.

Duration of test 24 hours.

Fuel per hour (as fired) 11,376 lbs.

Fuel per hour (dry) 10,592 lbs.

Approximate heat liberated per cubic foot of combustion space 12,900 B. t. u.

Actual water fed to boiler per hour 142,326 lbs.

Equivalent evaporation to steam 131,589.68 lbs.

Equivalent evaporation to blow down 1,476.66 lbs.

Total equivalent evaporation 133,066.34 lbs.

Per cent of rating 250.45.

Refuse—per cent of fuel as fired 0.39.

Efficiency of boiler, superheater, furnace and air heater 80.8.

NEW EQUIPMENT

Chicago Pneumatic Tool Co., 6 East 44th St., New York, has received an order for nineteen 265-horsepower gas engines for use on the new gasoline pipeline to be built by the Phillips Petroleum Co., Bartlesville, Okla., from the Texas Panhandle to St. Louis. These engines will use butane as fuel.

* * *

W. R. McGinnis has been engaged by the York Ice Machinery Corp. of York, Pa., to take charge of the refinery division of the refrigeration department of the company's business. Mr. McGinnis will specialize in aiding oil refining companies in the application of refrigeration to the process of refining petroleum.

* * *

After repeated requests by engineers in the milk handling industry, the Columbian Steel Tank Co., Kansas City, has added a new department for building truck tanks for hauling milk, using the same principles of construction as in Columbian truck tanks for the delivery of gasoline and oil.

NEW PATENTS

Prepared by R. E. Burnham, patent and trade-mark attorney, 1343 H Street, N. W., Washington, D. C., from whom copies may be obtained at the rate of 20c each. State number of patent and name of inventor when ordering.

July 1, 1930

REFINING

Process of and apparatus for treating oils—William G. Leamon, Newark, Ohio. Filed Nov. 4, 1921. No. 1,769,788.

Process of and apparatus for converting heavy mineral oils into lower-boiling products—William G. Leamon, Newark, Ohio. Filed June 26, 1925. No. 1,769,789.

Manufacture of useful products from mineral oils—William G. Leamon, Newark, Ohio. Filed May 1, 1926. No. 1,769,790.

Art of treating oils—William G. Leamon, Newark, Ohio. Filed Feb. 24, 1923. No. 1,769,791.

Treatment of oils for improving the same—William G. Leamon, Newark, Ohio. Filed Mar. 10, 1923. No. 1,769,-792.

Process of treating oils to improve the same—William G. Leamon, Newark, Ohio. Filed Nov. 2, 1923. No. 1,769,793.

Process of treating oils—William G. Leamon, Newark, Ohio. Filed June 26, 1925. No. 1,769,794.

Art of treating oils—William G. Leamon, Newark, Ohio. Filed Aug. 26, 1925. No. 1,769,795.

PRODUCTION

Drill-cutter mounting—John R. Dallerup, Houston, Tex., assignor to Reed Roller Bit Co., same place. Filed Aug. 22, 1927. No. 1,768,577.

Piston for oil-well circulation pumps—Henry C. Ries, Long Beach, Cal. Filed June 3, 1929. No. 1,768,633.

Apparatus for measuring depths of wells—Charles E. Van Orstrand, Washington, D. C. Filed Nov. 21, 1927. No. 1,768,809.

Means for cooling valves—Edwin W. Beardsley, Texas City, Tex., assignor to Petroleum Conversion Corporation, New York, N. Y. Filed Oct. 6, 1928. No. 1,768,880.

Water-drip for gas-wells—Claud M. Corey, Belton, Mo. Filed June 24, 1925. No. 1,769,795.

Combination casing-head—Clyde E. Hopkins, Seminole, Okla. Filed Apr. 7, 1927. No. 1,768,908.

Oil-well apparatus—Lemuel J. Husted, Los Angeles, Cal. Filed Aug. 18, 1926. No. 1,768,984.

Core-barrel—William I. McLaughlin, San Francisco, Cal., assignor to Standard Oil Co. of California. Filed May 20, 1924. No. 1,769,152.

Cable-line attachment for drilling-machines—John Reynard, Tiffin, Ohio, assignor to Loomis Machine Co., same place. Filed July 18, 1928. No. 1,769,-164.

Device for expanding collapsed casings—Clinton A. Langstaff, Hawthorne, Cal. Filed Aug. 15, 1928. No. 1,769,350.

Rotary disk-drill—William S. Holdaway, Sawtelle, Cal., assignor to Byron Jackson Co., West Berkeley, Cal. Filed June 20, 1925. No. 1,769,371.

Pipe-coupling and rotary-tool joint—Gustavus A. Montgomery, Dallas, Tex. Filed June 14, 1928. No. 1,769,-381.

Method of forming teeth on cutters—Harold W. Fletcher, Houston, Tex., assignor to Hughes Tool Co., same place. Filed Oct. 11, 1926. No. 1,769,-636.

Fluid-operated swab—Harold W. Fletcher and Norman H. Ricker, Houston, Tex., assignors to Hughes Tool Co., same place. Filed Oct. 20, 1928. No. 1,769,637.

Pump—Lynne D. Baird, Tulsa, Okla. Filed Sept. 22, 1926. No. 1,769,820.

MISCELLANEOUS

Liquid-dispensing device—Charles F. Overpeck and Francis M. Allen, Greensburg, Ind. Filed May 19, 1928.

Oil composition—Harry K. Ihrig, Berkeley, Cal. Filed June 22, 1927. No. 1,768,910.

July 22 and 23, 1930

REFINING

Process of resolving emulsions—Frederick H. Penn, Dallas, Tex. Filed Sept. 2, 1926. No. 1,771,096.

Process of refining hydrocarbon oils—Alexander S. Ramage, Detroit, Mich., assignor to Gyro Process Corporation. Filed Oct. 25, 1923. No. 1,771,350.

Process and apparatus for vacuum distillation—Philip Subkow, Los Angeles, Cal., assignor to Union Oil Co., same place. Filed Sept. 6, 1927. No. 1,771,385.

Distillation of oil—Edward W. Isom, Scarsdale, N. Y., assignor to Sinclair Refining Co., New York, N. Y. Filed Apr. 20, 1927. No. 1,771,409.

Apparatus for reclaiming (used lubricating) oil—James R. Miller, Pittsburgh, Pa., assignor to Miller Oil Purifier Co., same place. Filed Feb. 26, 1927. No. 1,771,684.

Method and apparatus for distilling oil—John C. Black, Destrehan, La. Filed Oct. 26, 1926. No. 1,771,705.

PRODUCTION

Overshot—John C. Stokes, Houston, Tex., assignor to Reed Roller Bit Co., same place. Filed June 11, 1929. No. 1,771,066.

(Well) pump—Thomas C. Bannon, Los Angeles, Cal. Filed Mar. 21, 1927. No. 1,771,070.

Packer for well-testing devices—Ernest H. Cox, Duncan, Okla. Filed June 6, 1927. No. 1,771,556.

Apparatus for opening cement sacks and dumping the cement into cement mixers—Doc L. Lewis, Duncan Okla., assignor to Halliburton Oil Well Cementing Co., same place. Filed Apr. 4, 1928. No. 1,771,797.

Fishing-tool—Verne Monroe, Cameron, W. Va. Filed Apr. 6, 1926. No. 1,771,808.

MISCELLANEOUS

Non-knocking motor fuel—Alfred C. Egerton, Oxford, England, assignor to Asiatic Petroleum Co., Ltd., London, England. Filed June 6, 1927. No. 1,771,169.

Liquid-dispensing devices—James K. Darby, Dayton, Ohio. Filed Mar. 28, 1927. No. 1,771,326

Liquid-dispensing apparatus—Frederick W. Delanoy and Leo Deutsch, Rochester, Pa., assignors to Wayne Pump Co., Baltimore, Md. Filed Nov. 12, 1926. No. 1,771,747.

August 5, 1930

REFINING.

Method of and apparatus for treating hydrocarbons—Frank E. Wellman, Kansas City, Kans. Filed Feb. 29, 1928. No. 1,772,331.

PRODUCTION

Apparatus for exhausting wells—Charles A. Anderson, Oakland, Cal. Filed Mar. 12, 1928. No. 1,771,988.

Pipe-cutting tool—Rowland O. Pickin, Los Angeles, Cal. Filed Feb. 28, 1929. No. 1,772,085.

Casing-head packing and oil-saver—Charley E. Dale, Barnsdall, Okla. Filed July 7, 1927. No. 1,772,210.

Well-drill rotary table—Waldo Sheldon, South Norwalk, Conn. Filed Feb. 3, 1925. No. 1,772,368.

Well-bailing pump—Waldo Sheldon, South Norwalk, Conn. Filed Aug. 1, 1925. No. 1,772,369.

Fishing-tool—Ralph I. Henderson, Charleston, W. Va. Filed Mar. 21, 1927. No. 1,772,437.

MISCELLANEOUS

Crate—Lossie E. Anderson, Chicago, Ill., assignor to Standard Oil Co. of Indiana. Filed Oct. 21, 1926. No. 1,772,381.

August 12, 1930

REFINING

Art of cracking hydrocarbon oils—Eugene C. Herthel, Chicago, Ill., assignor to Sinclair Refining Co., New York, N. Y. Filed Mar. 30, 1928. No. 1,772,865.

Process of purifying hydrocarbon oils—Jeno Tausz, Karlsruhe, Germany. Filed July 8, 1924. No. 1,772,921.

Method of sweetening petroleum hydrocarbons—Thaddeus W. Culmer, Robinson, Ill., assignor to Lincoln Oil Refining Co., Findlay, Ohio. Filed Mar. 1, 1928. No. 1,772,985.

PRODUCTION

Underreamer—Ernest Koppl, Long Beach, Cal. Filed Apr. 2, 1928. No. 1,772,491.

Turbone (well) pump—George W. Slocomb, Los Angeles, Cal. Filed Mar. 19, 1928. No. 1,772,525.

Oil-well pumping equipment—Edward C. Ekstromer, San Francisco, Calif., assignor of one-half to James F. Gallagher, Boston, Mass., and one-half to Edward C. Ekstromer Corporation, Reno, Nev. Filed Apr. 2, 1928. No. 1,772,539.

Packer—John T. Phipps, Huntington Park, Cal. Filed Dec. 28, 1927. No. 1,772,682.

Expanding mandrel—Edward E. Stevenson, Los Angeles, Cal., assignor to Emsco Derrick & Equipment Co., same place. Filed Jan. 19, 1929. No. 1,772,692.

Inside pipe-cutter—Harvey J. Denney, West Lake, La. Filed June 1, 1928. No. 1,772,710.

Deep-well turbine-pump drive—Roy M. Magnuson, Stockton, Cal., assignor to Sterling Pump Works, same place. Filed Mar. 25, 1929. No. 1,772,778.

Derrick construction—Howard E. White, Holdenville, Okla. Filed Sept. 10, 1928. No. 1,772,822.

Well cementing—John W. MacClatchie, Compton, Cal. Filed Oct. 22, 1928. No. 1,772,871.

Sand and scale trap—Samuel L. Hirst, Beeville, Tex. Filed Oct. 10, 1928. No. 1,772,946.

MISCELLANEOUS

Process for recovering molybdenum from petroleum hydrocarbons—Alfred Oberle, Kansas City, Mo. Filed May 20, 1929. No. 1,772,960.

«Certified Lubrication»

As Offered by the Standard of New York Includes Training in its Own Schools for Station Operators—A Plaque for the Station Window—Lubrication Charts—Special Advertising and Merchandising

NEW YORK, Sept. 19

THE new certified lubrication service the Standard Oil Co. of New York introduced in New York and New England in May, is backed by an elaborate educational plan. Only graduates of the company's 53 lubrication schools can deliver Socony Certified Service.

The company advertises its certified service as, "Lubrication as it should be done." It is endeavoring to take the guesswork out of car lubrication and instill confidence in the public mind in the quality of its work. By merchandising its service, it is promoting the sale of its lubricants.

Before the certified service plan was advertised last May, more than 11,000 service station employes has taken the 16 weeks' educational course offered at 53 points in the company's 22 marketing districts in the northeastern states. Classes are continuing. The instruction is under the general direction of Kenneth L. Bridges, of Socony's sales promotion department, who was assisted in the beginning by a corps of expert automotive and lubrication men.

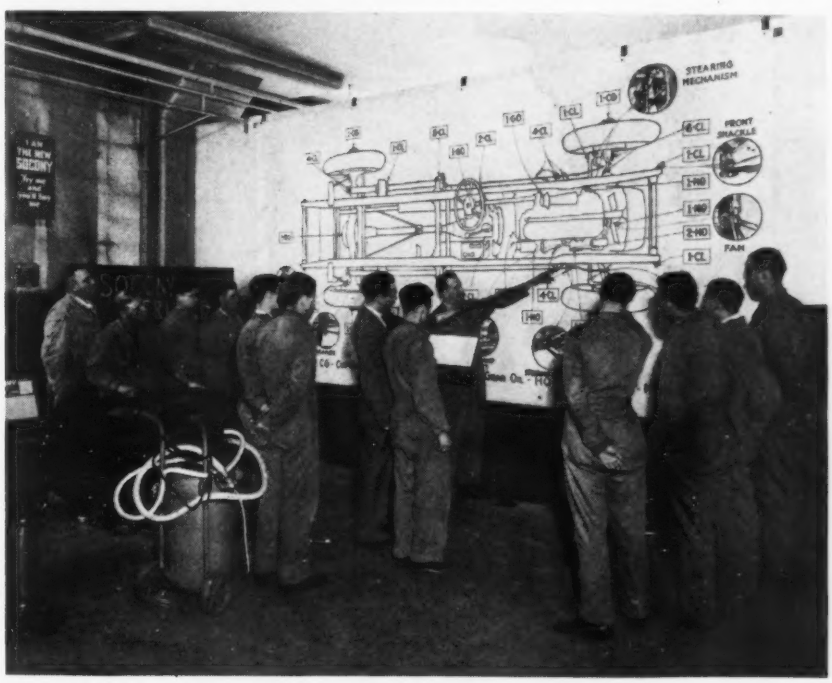
The course covers not only lubrication but also the general subject of service station selling. The students are also instructed in the elements of crude oil production and refining. There are 10 screen talks on these topics: 1, regular gasoline; 2, Socony Special plus Ethyl; 3, motor oil; 4, aircraft oil; 5, refining of gasoline; 6, geology; 7, certified lubrication; 8, the spot test; 9, through customers' eyes, and 10, driveway selling.

The topics are covered by the 53 instructors. Practical demonstrations are given with each. Cut down chassis are used in the lubrication work. All tools and grease handling appliances used at a pit or lift form part of the classroom equipment. Students are required to spend at least four hours on lubrication work at service stations. This work was analogous to the laboratory or shop work in a college course.

Attendance at the classes is not compulsory but no Socony station can give certified lubrication service unless all regular employes of the station have completed the course. When all have so qualified the station is given an enameled shield as a diploma to be hung in a conspicuous place. A station without a plaque today gets comparatively little lubrication work, it is said, because the public is being educated to look for the shield, which means expert workmanship and a thorough job.

If a complaint that a station has not done a thorough job is found to be a fact, the plaque is removed until the man who failed on the job has again taken that part of the course covering the work at which he failed. The removal is a demerit and all station men are alert to see that none of their fellows fail. The plan thus stimulates the morale of the service station organization.

Each class period is scheduled to last about an hour and



Showing how to lubricate by means of charts and cut down chassis. A Socony class at Jamestown, N. Y.

T A G

an
of

KEY
CERTIFIED
FITTING
Maximum Working Pressure 1350 lbs.
At 1000 Fahr.
Tested Hydrostatically 6000 lbs.
Inspected By E. K.
GUARANTEE
This fitting is made of the finest material obtainable for the service for which it is recommended; and is Guaranteed to be free of all defects in material and workmanship. It carries a very high factor of safety for the pressure and temperature referred to above.
KEY BOILER EQUIPMENT COMPANY
E. St. Louis, Ill., U. S. A.
(Over)

Fitting shown is Key Forged Steel Sectional Type Stream Line Flow Fitting —quickly dismantled for cleaning of tubes. Its design reduces pressure drop through coils to a minimum, eliminates turbulence and prolongs the life of tube ends.

Be sure to visit our exhibit at the Exposition in Tulsa. Our representatives will be glad to discuss your particular requirements with you.

KEY RETURN BENDS

G E D

additional guarantee of Performance

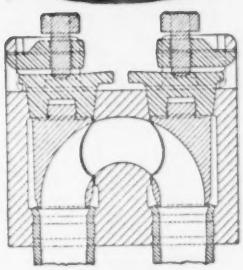
KEY Refinery Fittings have always been designed with a careful consideration of these three factors—

MINIMUM PRESSURE DROP
UTMOST EFFICIENCY
HIGHEST FACTOR OF SAFETY

Now, every Key Fitting which leaves our plant bears this Guarantee Tag as your absolute assurance that it will perform satisfactorily and safely.

Key Refinery Fittings have been tested and proved in practically every refining center in the world. They have been designed for every type of still construction—especially in installations which require unusually close spacing of tubes. Key Fittings are made in many shapes, sizes and styles, designed for varying operating pressures and temperatures.

Write our nearest office for complete information on Key Fittings.



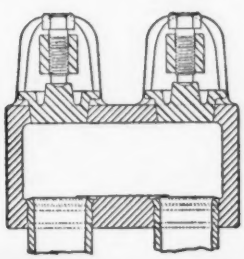
Key Return Bend Fitting, with deflectors and radiused port, providing an uninterrupted flow of oil through the fitting. Sectional view shows barrel type deflectors attached to the hand hole plugs, but open-face deflectors are optional.

KEY BOILER EQUIPMENT CO.
EAST ST. LOUIS, ILLINOIS

NEW YORK CITY
1237 Chrysler Building

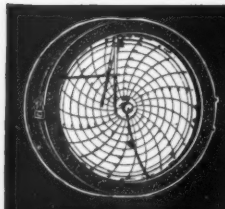
TULSA, OKLAHOMA
733 Mayo Building

LOS ANGELES, CALIFORNIA
2814 Santa Fe Avenue

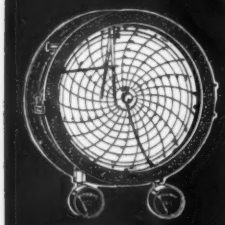


Plain box type return bend, with projecting ear lugs to retain holding members. Can also be made with same style of holding members as shown above.

KEY RETURN BENDS



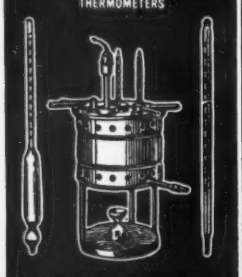
RECORDING THERMOMETERS AND PRESSURE GAGES



RECORDER - CONTROLLERS

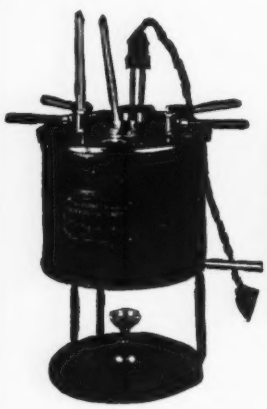
AUTOMATIC CONTROLLERS

DIAL - INDICATING THERMOMETERS

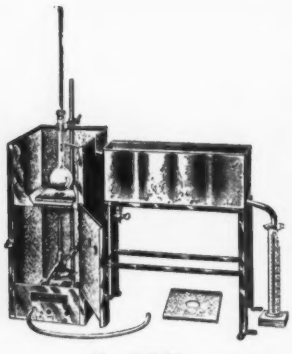


OIL TESTING INSTRUMENTS, THERMOMETERS, HYDROMETERS, ETC.

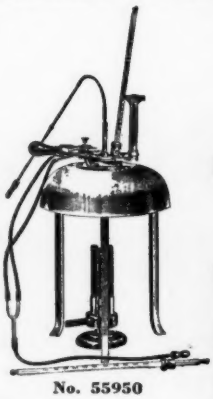
TAG Oil-Testing Instruments *for* Domestic and Industrial Fuel Oils



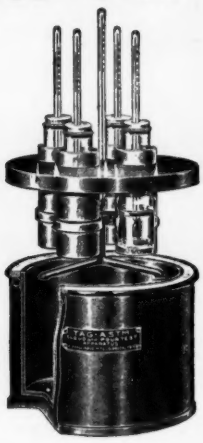
No. 55400



No. 55850



No. 55950



No. 55550

No. 55400—TAG Saybolt Universal-Furol Viscosimeter. Universal tip for No. 3 domestic and No. 4 industrial fuel oils. Furol tip for No. 5 and No. 6 industrial fuel oils.

No. 55850—TAG-A.S.T.M. Distillation Apparatus for domestic fuel oil.

No. 57910

—TAG-A.S.T.M. Centrifuge with Protecting Dome for determining water and sediment in domestic and industrial fuel oil.

No. 55950—TAG-A.S.T.M. Standard Pensky-Martens Closed Tester. Other forms of flash and fire testers are not standard for fuel oil.

No. 55550—TAG-A.S.T.M. Cloud and Pour Test Apparatus for use when pour point specification is required.

TAG Instruments listed and illustrated above are required for testing domestic and industrial fuel oils in accordance with the new standard specifications announced by the Oil Heating Institute, 342 Madison Avenue, New York City, and adopted at a joint conference of producers, distributors and refiners, with manufacturers of oil burners.

These are only a few TAG Oil-Testing Instruments required for making standard tests of fuel oils. The TAG LINE IS COMPLETE, covering all standard instruments for making *every test* of petroleum products with exactitude and in accordance with standard procedure. Every TAG instrument conforms to official specifications. They are all listed and described in Catalog No. N 699. Write for your copy today using coupon below.

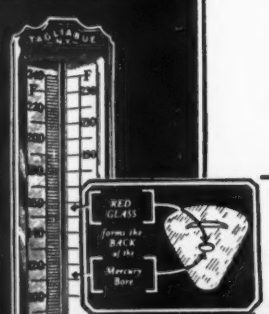
The TAG Oil Manual 22nd Revised Edition, $1.00 plus postage.

"There's a TAG Instrument Jobber Near You"

Please send me, without obligation, Oil Testing Instrument Catalog No. N 699.

Name_____

Address_____



C. J. TAGLIABUE MFG. CO.

PARK AND NOSTRAND AVE'S., BROOKLYN, N. Y.

Insist on Mercury Thermometers with the TAG-Hespe RED Reading Column

TAGLIABUE Mfg. Co. BROOKLYN TAG Reg. U.S. Pat. Office

BRANCH OFFICES AND *FACTORIES

BIRMINGHAM, ALA. BOSTON, MASS. CHICAGO, ILL. *CLEVELAND, OHIO
PITTSBURGH, PA. PORTLAND, ORE. * SAN FRANCISCO, CALIF.
*SHREVEPORT, LA. ST. LOUIS, MO. TORONTO, ONT., CAN.

a half one night a week but experience has been that students become so interested the period usually is stretched to around three hours. Instructors are bombarded with questions, so the class evolves into a conference.

Classes are usually limited to not more than 12 men. Only Socony employes and commission agents can attend. Dealers are not admitted because, in the east, dealers are usually split accounts and the Socony schools are intended to train Socony men.

Until August the instructors had given only part of their working time to the schools but from now on they will devote all their time to instruction. Socony salesmen of the future will be drawn from the service station sales force. Advanced courses are under way to give more complete instruction in the properties, lubricants and the principles of all kinds of lubrication. The advanced courses also cover the specialties the company manufactures, even to candles.

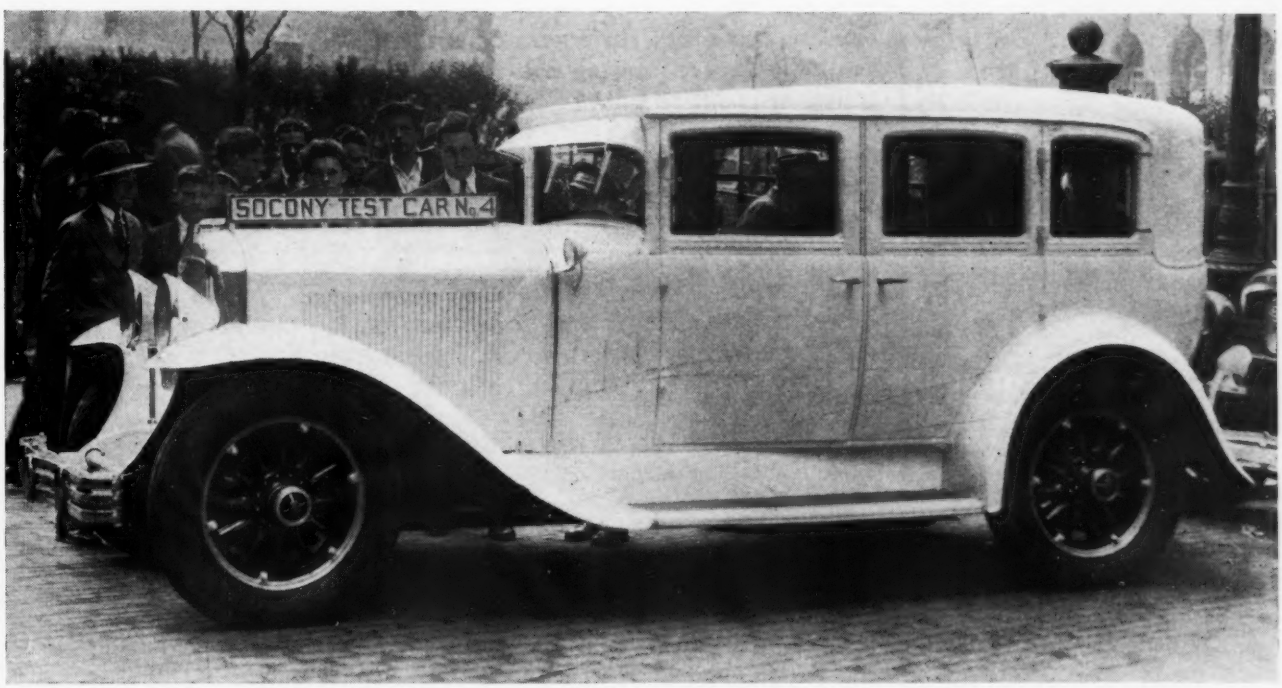
The certified service was introduced in two full page advertisements in newspapers of the territory. Once a month since the service has been covered in a five full-column advertisement. The service has been merchandised over the radio, by window cards, folders, by direct mail, and by personal solicitation by graduates of the schools themselves.

A Rochester, N. Y., Socony lubrication class at work on a chassis in the classroom. The equipment is the same as used at lubrication stations

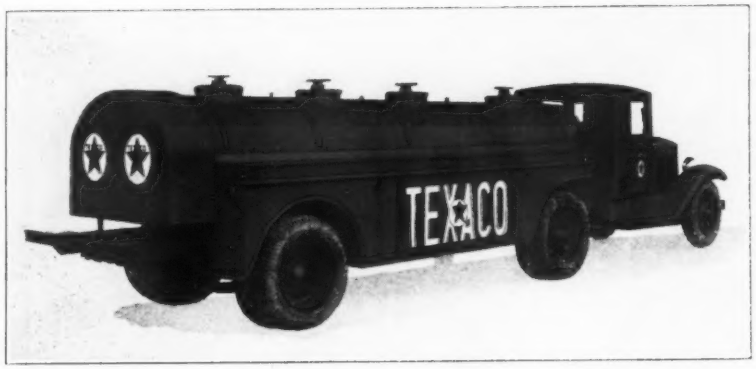
The certified lubrication plan was worked out with automobile manufacturers whose engineers co-operated with Socony's automotive and lubrication engineers. The company prepared charts of all makes and models of chassis. These charts showed where to lubricate and what kind of lubricants to use. As many as seven lubricants are required to properly lubricate a car, the company states, and the fewest number of lubricants required per car is five.

The number of points to be lubricated by hand ranges from 17 on the Packard equipped with a one-shot system for fixed points, to 58 on a Hudson Super-six.

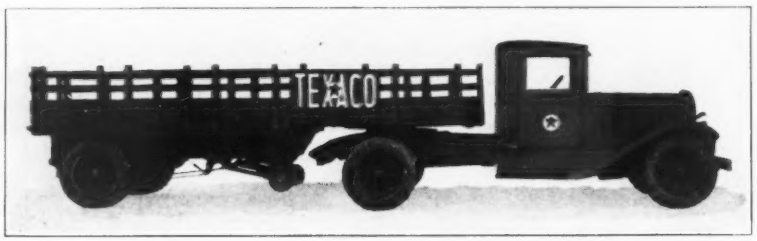
Each of the 10 screen talks is printed in a booklet, copy of which is lent the student after each talk is delivered. He may



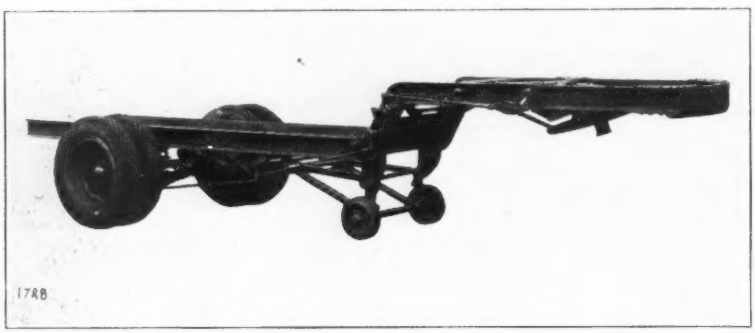
Socony test car attracts a flock of lower Broadway office boys, and messengers



A 1,000 gallon tank body mounted on Trailmobile chassis and pulled by a 1½ ton tractor



A 3-ton stake body mounted on a Trailmobile chassis and drawn by the same 1½ ton tractor as the tank body illustrated above



The famous Trailmobile chassis, with pressed steel frame. Used on both of the two jobs pictured above. Note its extreme simplicity and ruggedness.

A sure way to INCREASE PROFITS

LEADING oil companies have demonstrated that Trailmobile equipment increases profits not only through worth-while savings in equipment costs but also through substantial reductions in operating costs.

With a single tractor and one driver, a tank body Trailmobile and a stake body Trailmobile replace two trucks and two drivers. Obviously, a big saving not only in rolling stock but also in delivery costs.

In the morning, for instance, the driver delivers gasoline in the tank body Trailmobile; in the afternoon, drums of oil and small shipments on the stake body Trailmobile.

And in winter, the same tractor can also be used to pull Trailmobiles loaded with fuel oil—an additional economy that means extra profits.

Trailmobile offers unmatchable value. Never before such simplicity of design and construction . . . such low first cost . . . such operating economies . . . such long life . . . such lightness with great strength. Investigate Trailmobiles before you buy.

THE TRAILMOBILE COMPANY
3102 Robertson Ave., Oakley, Cincinnati, Ohio

Trailmobile
Trade-Mark Reg. U. S. Patent Office

« TRAILERIZE and ECONOMIZE »

study it for a week, quiz himself by means of questions which the schools have published on separate sheets, and he may be questioned at the next week's class if the same subject is covered.

The talk on certified lubrication explains the need for complete lubrication of a chassis, the use of the chart, the various lubricants to be used and where to use them, cleaning of differential and transmission cases, and in general the dangers of faulty lubrication. It also tells how to handle the customer's car to keep it clean.

There are instructions for detecting and stopping squeaks, checking and filling the battery, filling the radiator, inflating the tires and cleaning the windshield.

The course covers the workings of the clutch, starter, transmission, differential, brakes and universal joints. If a car has any peculiar features, the unusual parts are demonstrated in the classroom.

SOCONY
CERTIFIED
LUBRICATION
SERVICE
This is to certify that the operators of this station have qualified as experts in a course of automobile lubrication
STANDARD OIL COMPANY OF NEW YORK

The plaque that certifies certified lubrication service

The folders used in merchandising the service embrace a series for each make of car. A customer may secure a folder for his car so that he may check the work done if he is traveling where Socony has no certified stations. The following is taken from one of the folders:

"Forty-one points on your Oakland require correct lubrication at regular intervals. Five different types of lubricants are necessary.

"Do you know where all of these points are—do you know the proper lubricant required?

"Socony Service Station men do not trust their memories when lubricating your Oakland. They are guided by a specially prepared chart of your car, illustrated in this folder.

"Guesswork is eliminated because the lubrication chart for your car has been prepared by Socony engineers, in co-operation with the car manufacturer.

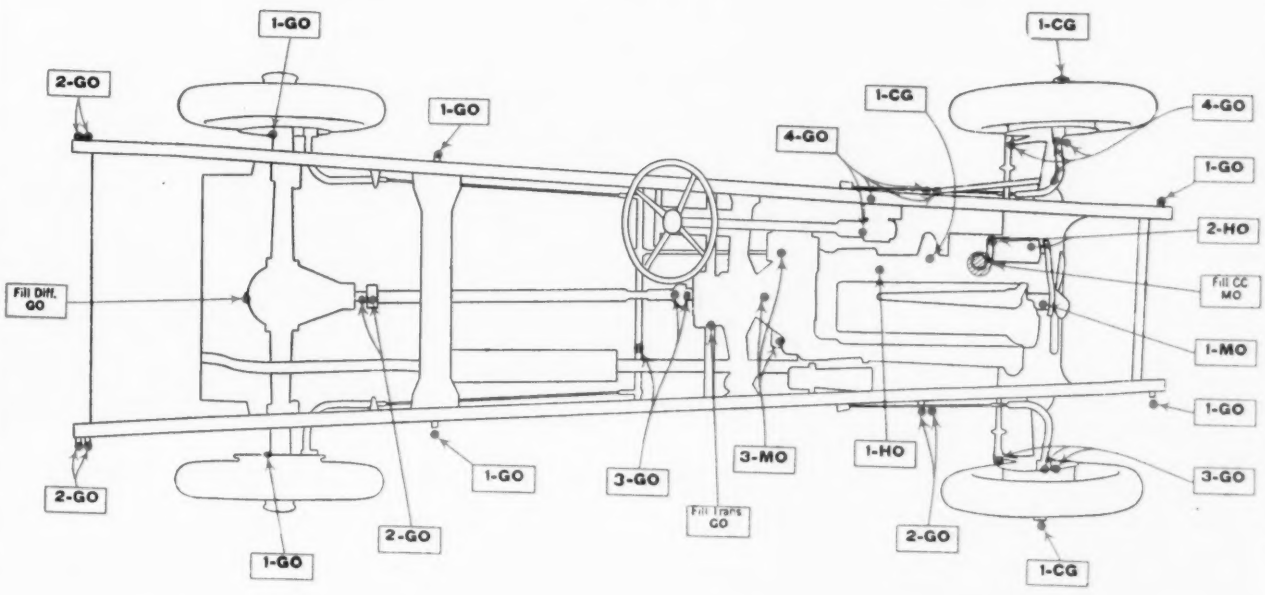
"The man who lubricates your car has been trained in correct Oakland lubrication at a Socony Lubrication School. He has the equipment, the lubricants, the knowledge and the

SOCONY *CERTIFIED* LUBRICATION — OAKLAND

Model — All American Six

(This model is illustrated below)

***41** points on this model require lubrication — **5** lubricants required*



KEY TO CHART

CG — Socony Cup Grease
GO — Socony Gear Oil
HO — Socony Household Oil
MO — Socony Motor Oil
SO — Socony Auto Spring Oil

(Numerals indicate number of points requiring lubrication.)

SPECIAL INSTRUCTIONS

Model	Crankcase Capacity	Transmission	Differential	Summer MO	Winter MO
All American Six	6 qts.	4 pts.	4 pts.	30	20

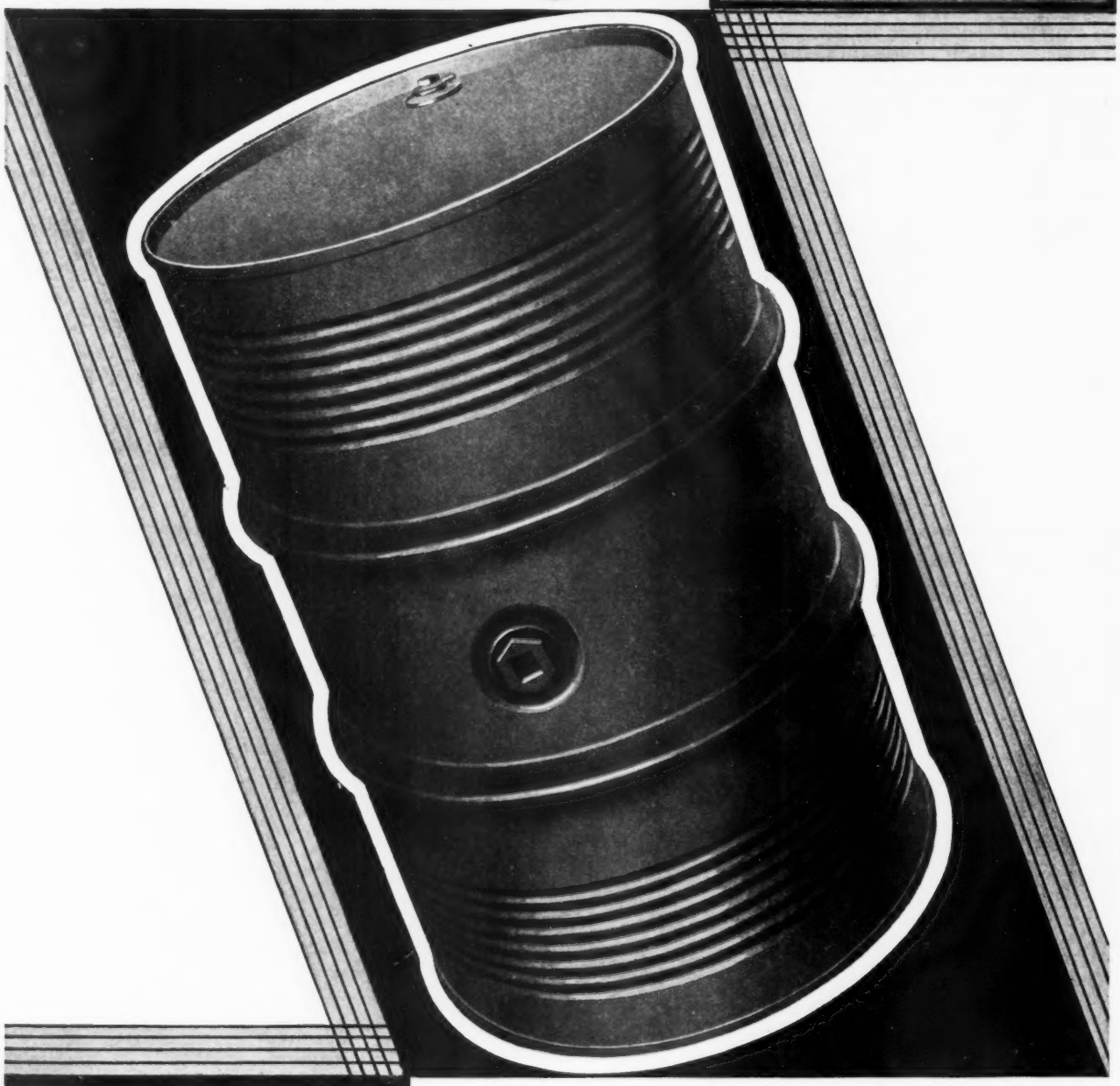
Lubricate brake and clutch pedals with Motor Oil.
Lubricate springs, brake fittings, etc., with Socony Auto Spring Oil.

© 1930, S. O. N. Y.

Sample of the Socony lubrication chart

A MIRROR FOR *YOUR* PRODUCT

P.I.W.
STEEL BARRELS



THE
PETROLEUM
IRON WORKS
COMPANY
SHARON · PENNA
NEW YORK CHICAGO TULSA

A strong, P. I. W. Barrel, attractively painted and decorated will mirror the worth of your product and reflect a justifiable pride in your name and trademark.

You will inspire confidence and clearly indicate the high quality of your merchandise by shipping and displaying in P. I. W. quality Barrels.

skill to do the job the certified way.

"You can trust your car in his hands with the assurance that every part will be correctly lubricated with the correct Socony lubricant—that every part will be protected against unnecessary wear.

"That's why we call it Socony Certified Lubrication—It's lubrication as it should be done."

Socony stations have pits or lifts. Tools consist of pressure guns for Alemite, Zerk and Dot fittings, gear lubricant dispensers, transmission and differential flushing equipment; spring sprayers and wire brushes for cleaning springs; wrenches; screw drivers; hammer, and pinch bar. A special tool board is being designed with a place for each tool of the required equipment. At the top of the board will be attached the work charts for each make and model of car.

Socony certified stations make out a work ticket for all jobs. The ticket is put in a holder and hung on the radiator cap. Steering wheels are covered with a cover of the drum type like that used for tires. Seats are covered with cloths.

After a Socony operator refills a crankcase he checks the gage to see that no mistake was made in the volume of oil put in. He also checks the pressure and if necessary on some cars he primes the oil pump. How to do this operation is one of the things taught in the schools.

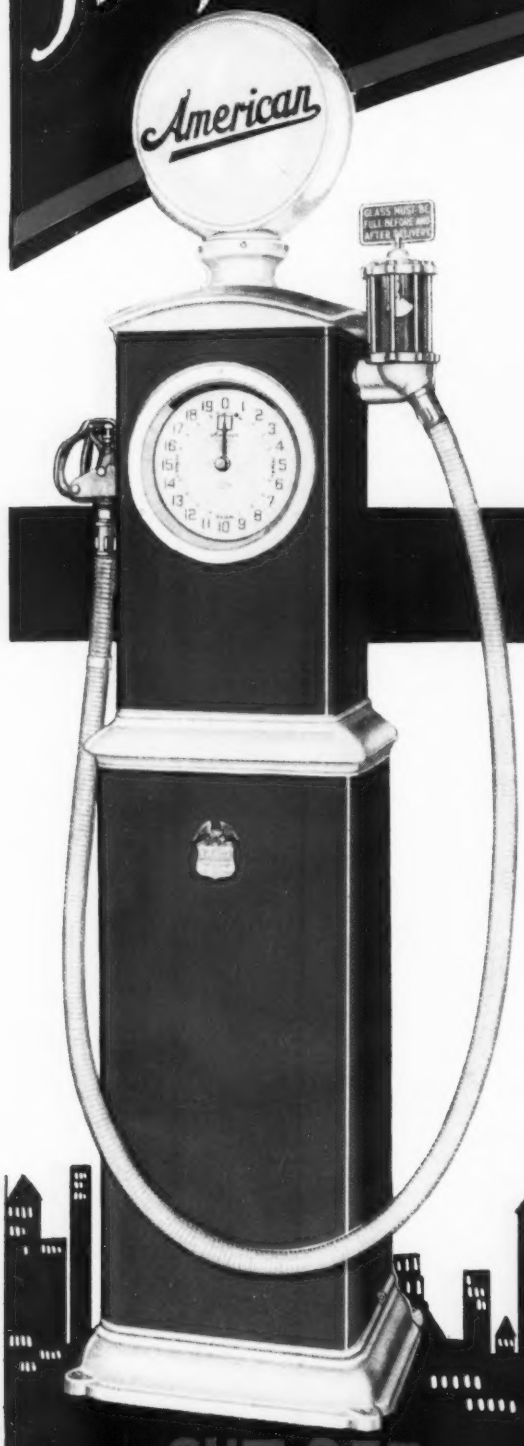
The spot test, dealt with in one screen talk, is a merchandising feature. It is a test of crankcase oil similar to the blood test used by physicians.

A drop of crankcase oil is placed on a piece of filter paper which the company has bound in small booklets. The sediment in the oil will make a dark spot, around that will be a green band of fairly clean oil, and beyond that will be a lighter band indicating the dilution of the oil. It is a good indication as to whether the oil needs changing.

Socony's List of Lubrication Points; Lubricants Required

Car	Model	Points to be lubricated	Lubricants required
Auburn			
	6-80, 6-85, 8-90, 8-95, 120, 125	20	7
	6-76, 8-88, 115	39	6
Buick			
	40, 50, 60, 115, 116, 120, 121, 128, 129	61	6
Cadillac			
	314, 341, 341B, 353	51	6
Chandler			
	6-65	51	6
	31A, Big 6, Royal 75, Royal 85, Royal 8	36	6
Chevrolet			
	National Four, Series AB	42	5
	International Six, Series AC	45	5
Chrysler			
	65, 66, 70, 75, 77	28	6
	De Soto Six and Eight	37	6
	Imperial	31	5
	52, 58, Plymouth	34	5
Dodge			
	Four, 128 Series	42	6
	Standard Six, Victory Six, Senior Six	44	6
	Eight	30	7
Durant			
	M-2, Star	61	6
	55, 60, 63, 65, 66, 70, 75	59	7
Erskine			
	(Current Model)	49	5
Essex			
	Super-Six, Challenger	45	6
Ford			
	"A"	44	6
	"T"	34	5
Franklin			
	130, 135, 137	38	7
Gardner			
	75, 80, 90, 120, 125, 130, 136, 140, 150	57	6
Graham-Paige			
	610, 612, 614, 615, 619, 629, 835	51	7
	621, 827, 837	24	6
Hudson			
	Super-Six	58	6
	Eight	39	7
Hupmobile			
	Six and Eight	42	6
La Salle			
	(Current Model)	54	6
Lincoln			
	(Current Model)	52	6
Marmon			
	74, 75, E75	18	7
	68, 69, 78, 79, Big Eight	31	7
Marquette			
	(Current Model)	49	5
Nash			
	Standard Six (320 and 400)	38	6
	Special Six and Advanced Six (160, 260 and 360)	46	7
	Advanced Six, 460, Single Ignition Six, Twin Ignition Six and Eight	38	8
Oakland			
	All American Six	41	5
Oldsmobile			
	F	38	7
Packard			
	Six and Eight	17	7
Peerless			
	6-60, 6-61, 6-61A, 6-70, 6-72, 6-80, 6-81, 6-90, 6-91, Standard, Master and Custom Eight	36	7
Pierce-Arrow			
	80, 81	54	6
Pontiac			
	Big Six	40	6
Reo			
	Wolverine, Flying Cloud Mate, Flying Cloud Master	33	7
Roosevelt			
	(Current Model)	42	7
Studebaker			
	Dictator, Commander, President	39	7
Viking			
	(Current Model)	42	7
Studebaker			
	Dictator, Commander, President	39	7
Viking			
	(Current Model)	41	5
Whippet			
	Four and Six	38	6
Willys-Knight			
	56, 66A, 66B, 70A, 70B	39	6

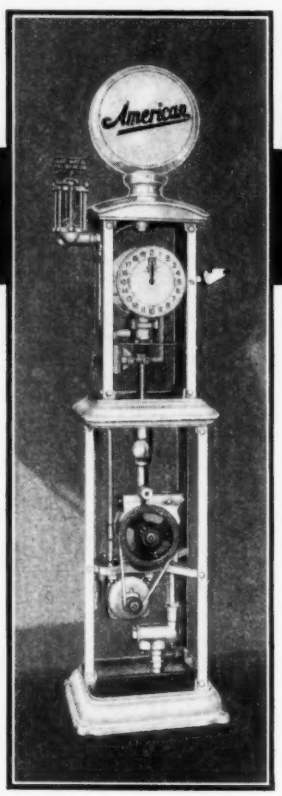
They're Right! All the way t AMERICAN



AMERICAN PRESTO-SERVUS METER SYSTEM

Cut 237, an outstanding meter job that's designed right and is engineered right . . . no more parts than are necessary, but every part IS necessary. Combines quiet, smooth-running mechanism in our handsome, sturdy

"MAJESTIC" CABINET



FEATURES:

Slow speed, high capacity rotary type pumping unit with belt drive . . . sight glass . . . bell on meter . . . large capacity strainers both above and below pumping unit . . . large 10″ illuminated dials, easily read . . . and many other features.

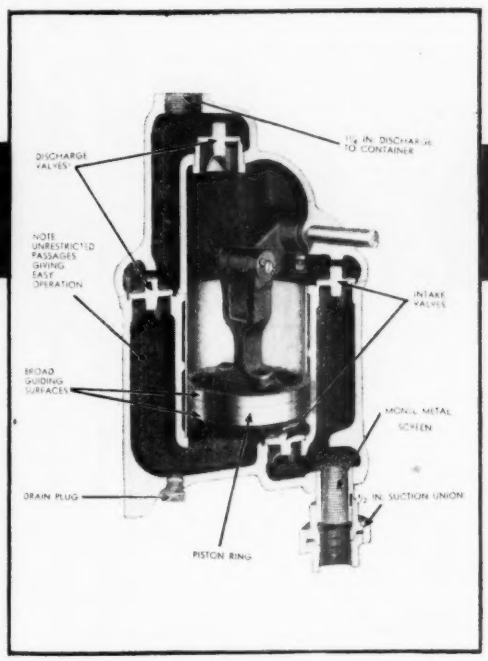
Presto-Servus provides accurate, continuous flow . . . accessibility of all parts for servicing . . . dependable operation . . . low upkeep expense . . . long life. In short, it's a fine modern, upstanding, stalwart job that invites business because it "looks business," and holds business because it delivers "fill-the-tank" service as the motorist wants it.

Write today advising your requirements

...y through! Both these ...N up-to-the-minute Pumps

AMERICAN OCTAGON "ECONOMEE" PUMP

Cut 2487, the champion wet hose pump for 1930—selling to beat the band, because it's doing a first-class job for owner, operator, motorist. Includes among many features, the celebrated



whirlwind pumping unit

The Whirlwind Pumping Unit is all metal, a metal piston ring being used instead of leathers, eliminating all leather troubles. This means no more expense, no more inconvenience, no more valuable time lost in replacing leathers in the field. The Unit is non-rusting and non-corroding, and is not affected by water, rust or scale in pumping unit. The Unit is trouble-free and worry-free—delivers 10 gallons in 12 strokes and handles any and all types of gasoline successfully.

The OCTAGON "Economee" is a beautiful, well-engineered pump . . . its design is modern in every respect and the pump is a high-grade investment not only because of its attractive appearance, but because of its high quality mechanical features. The simple assembly of the pump, together with the Whirlwind Pumping Unit, is a definite assurance of minimum upkeep and long life.

Write today, advising your requirements

THE AMERICAN OIL PUMP & TANK CO.
1713 Dalton St. Cincinnati

In demonstrating the quality of gasoline to the classes several kinds of matches are used. A match that will light quickly but die out immediately is used to indicate the kind of gasoline that starts with a flash but has no sustaining power. A match that is hard to light under ordinary conditions demonstrates a gasoline with poor starting qualities. A match that only sputters for 15 or 20 seconds demonstrates a generally poor quality of motor fuel. A match that is easy to light and burns steadily is used to symbolize a good quality of gasoline.

The company the last few months has been introducing a gum-free gasoline called Socony Banner gasoline. Parades are held in various cities, of automobiles from the early models to the present front-drive and 16-cylinder machines. Often camels and elephants are rented from circuses to add picturesqueness to the history of

SOCONY LEADERSHIP

Last Year Socony introduced Socony Special *plus* Ethyl—by every test the finest motor fuel.
And now SOCONY LEADS AGAIN

A wonderful new service to add to the life of your car

AS A RESULT of a year of close cooperation with the leading manufacturers of motor cars, Socony announces a new lubrication service for car owners.

Eleven thousand men have been trained in 53 schools to render this service—a *Certified* Lubrication Service.

If you take your car today to a Socony Station displaying the special sign shown above, you can know positively that it will be lubricated *right* at every single point.

The cost will be no more than you have been paying for hit-or-miss lubrication service.

There are about 40 points on your car that require lubrication. The 36 popular makes of automobiles have an average of thirteen models apiece, representing the production of only the past three years.

36 cars x 13 models x 40 lubricating points = about 19,000 lubrication points which the service man must remember—as well as the proper lubricant for each.

Many cars require 7 different lubricants for different parts.

No wonder that service men cannot carry all this in their heads. No wonder, when you drive your car away from a station, you often wonder whether some points have been missed.

Working with the manufacturers, Socony engineers have developed special charts showing every lubrication point on every model of every leading make of car, and indicating just which lubricant should be used.

Special tools have been acquired to enable the service men to reach every grease cup, every joint, every single lubrication point.

Finally—in 53 schools conducted by lubrication engineers—11,000 Socony Service men have been trained to lubricate your car not only thoroughly but quickly, to save your time.

Take your car in today and have it made ready for its summer's work. Watch the chart as the service man covers each point. Note how quickly and surely he works. No guesswork, no carelessness, everything *sure*. That's why we call it Socony *Certified* Lubrication Service.

●

STANDARD OIL COMPANY OF NEW YORK

● SOCONY
Certified
LUBRICATION SERVICE

What is it?

A service performed for you by men scientifically trained in schools over a period of 16 weeks, in the expert lubrication of cars.

These men work from special charts—prepared by Socony engineers with the cooperation of the car manufacturers—showing every point to be lubricated and indicating the exact kind of lubricant to use at each point, as recommended by the car manufacturers.

They have the proper tools, they use Socony lubricants—best in the world.

What it means to you

Socony *Certified* Lubrication Service assures proper lubrication for *your* car.

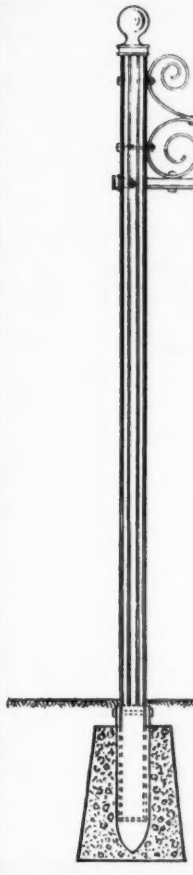
The use of the chart of your own car assures you that not a single lubrication point has been missed and that the proper lubricant has been used at each point.

Where can you get it?

Socony *Certified* Lubrication Service is available at Socony Stations displaying the sign above. More stations will be commissioned to render this service as their operators prove they are qualified.

Before making your summer automobile trips, write to Socony Touring Service, 26 Broadway, New York City, for best routes and information on road conditions.

How Socony introduced Certified Lubrication in its territory—a newspaper advertisement



REVERE

Fluted Sign Standards

Here is your opportunity to obtain beauty combined with strength—something rarely found in Gas Station Sign Standards. Revere fluted construction provides the necessary rigidity to withstand weight of heavy signs as well as wind and weather. There are single and double arm types available, with or without electric equipment, also standards for flood lighting. Exclusive special designs made on order.

Our prices will surprise you. Send for Bulletin and price list.

SEE *us at the International Petroleum Exposition. Booth 41.*

REVERE ELECTRIC CO.
757 W. Jackson Blvd.
Chicago

619

Oil men are buying their insurance through us and saving money on it.

If you are not one of these your overhead is larger than necessary.

NATIONAL
Petroleum Mutual
Fire Insurance
Company
437 Chestnut Street
Philadelphia, Pa.

ANNOUNCEMENT

To our many friends we are pleased to announce that we are once more in a position to supply 100% Vacuum Distilled Steam Refined and Centrifuged Bright Stocks, and High Flash Viscous Neutrals, as well as a limited amount of Warren "E" Stock.

Our newly increased refining capacity comprising the most modern type of equipment is now in operation.

We will appreciate your inquiries.

INDEPENDENT REFINING CO.
Oil City, Pa.

transportation. Elephants demonstrate power claimed for the new gasoline.

While the parades are in progress, airplanes, including Socony's, fly overhead.

The company maintains a test car in each of its four divisions. These cars are equipped with decelerometers, accelerometers, gradometers, inclinometers, tachometers, pulsometers and other instruments to show scientifically the properties of Socony motor oils and gasolines.

New Equipment

New Type Greases Dispensing Unit Is Brought Out

THE Wayne Co., Fort Wayne, Ind., is manufacturing a low pressure gear compound dispensing unit with meter attached. The device was invented by Theodore H. Eickhoff and Kenneth C. Clapp. Patent applications have been assigned to the Clapp Patent Corp., Cleveland.

The device was exhibited at the National Conference on Weights and Measures in Washington in June. It is said to meet the recommendations for gear compound dispensers adopted tentatively by the conference in 1929 and which will become effective Jan. 1, 1931.

Heavy sheet steel construction is used throughout the device. There is a tank for the compound with a V bottom. In this V a screw conveyor to carry the compound to the pump or booster mechanism.

In another compartment is motor and reducing gears. A tray in the top of this compartment is for tools. The bottom of this compartment is open to provide ventilation for the motor.

The screw speed is one third that of the motor.

The compound tank holds 100 pints. The pump or mechanism is attached to the screw but projects beyond the base of the compound tank. This mechanism consists of a wiper screw which is two spirals of the screw thread, a channelled cam which rotates, and a plunger or wiper which travels in the channel of the cam.

When the motor is started, the conveyor screw rotates, carrying the compound toward the booster mechanism. The compound is forced into the wiper screw where it is discharged into the channelled cam. As the wiper screw discharge opening passes the wiper, the compound is sheared off and forced under pressure into a port in the wiper.

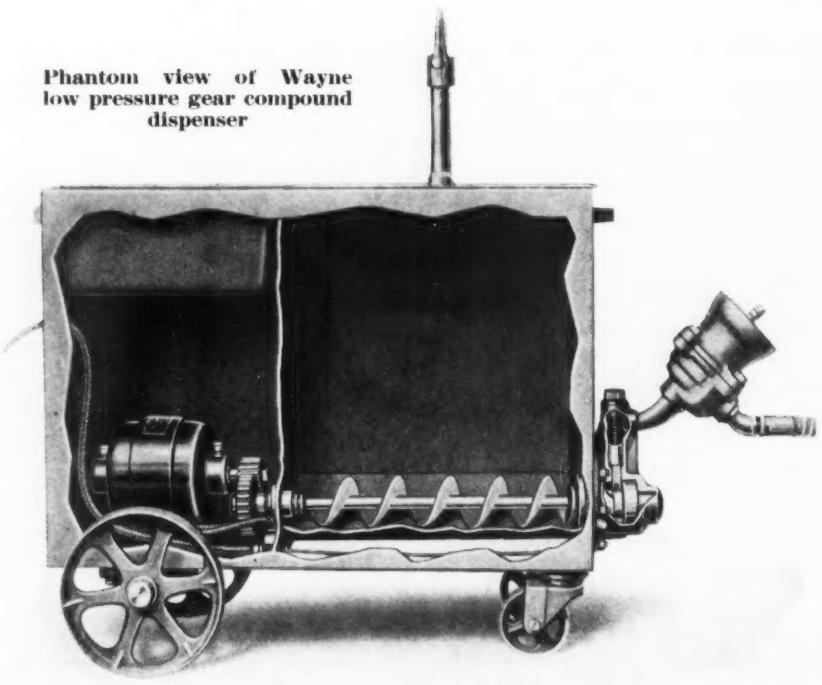
The wiper is held against the cam by a spring. As the travel of the wiper is only ⅜ inch, the inventors claim it cannot set even after a long period of operation.

From the wiper the compound passes through a small chamber and tube through the meter and into the hose. By-passing is provided with a pressure regulating nut.

The meter dial registers from 0 to 8 pints and a permanent counter registers to 9999.

A similar high pressure unit for chassis lubrication is also being made. The difference between the high pressure and low pressure units is mainly in the booster mechanism. The high pressure unit need not have a meter. Small core hose is used on the high pressure unit. This hose has a pistol grip valve with switch.

The low pressure unit also has a pistol grip valve but the by-pass makes unnecessary a switch in the grip.



Phantom view of Wayne low pressure gear compound dispenser

* * *

Two additions to one of the Pittsburgh Equitable Meter Co. plants at Pittsburgh have been completed. Approximately 100,000 sq. ft. of additional floor space is available.

* * *

A. Y. McDonald Mfg. Co., Dubuque, Ia., is selling the McDonald lock lever barrel faucet, specially ground for gasoline and oil use. It is lubricated with the company's special compound which it claims is not affected by gasoline or oil.

It turns easily, will not leak and last for years, the company says. It can be used also for alcohol and hose and type will be furnished where required.

OIL MARKETERS HELPED DESIGN THE OTTAWA LIFT

Practical service station men told us how a good lift should be made to render the most efficient service and bring increased profits from greasing jobs.

Because we designed the Ottawa Lift that way, it is the most practical lift on the market. Every ounce of material used in its construction is effectively placed for greater strength and safety. Heavy production reduces labor costs. These savings are passed on to you in Ottawa's low purchase price.

Five Models to Choose From

Ottawa Lifts are supplied in both free-wheel and drive-on types. One of these five proved, dependable profit producers is especially suited for your needs.

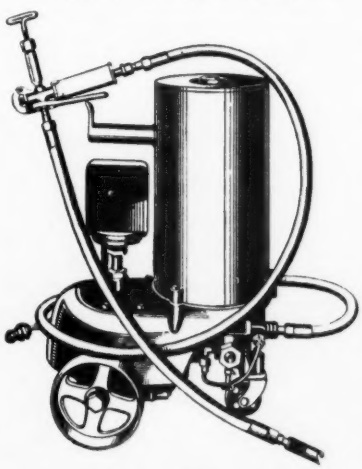
Before buying any lift—write for details of the special features that make Ottawa a better lift for less money. Your name will also bring particulars and prices of other profit-producing Ottawa Equipment, including the new Ottawa All-Electric Grease Gun. Write today.

OTTAWA MANUFACTURING CO.

"Machinery Builders for 30 Years"

238 Fuller Street **Ottawa, Kansas**

OTTAWA All-Electric Grease Gun, Model E



—a ruggedly built gun, simple in design and operation, with many superior features. A fitting companion to the Ottawa Lift.

OTTAWA LIFT

Western Farmers Co-Operative Owns Oil, Equipment Supply Company

By E. L. Barringer
N. P. N. STAFF WRITER

KANSAS CITY

A GROUP of farmer co-operative oil companies the central west is operating with a different type of internal organization, owning its own oil and equipment supply company.

The local plants comprising the group co-operatively own and control the Union Oil Co. in Kansas City. Oil and equipment are supplied the member co-operatives through this company. Light oils are purchased from refineries, shipped direct, and the local co-operative is billed through Kansas City. Equipment may be purchased in the same way. The Union Oil Co. has a compounding plant in north Kansas City and ships the finished oil in barrels. The only direct retailing done by the Union Oil Co. is through a service station at the plant, and by tank trucks in Clay county, Missouri, northeast of Kansas City.

To date there are 63 bulk plants in this group, which was started late in 1928. In North Dakota there are 3 companies, South Dakota 7, Nebraska 11, Colorado 9, Kansas 20, and Missouri 13. These companies have their local name, and the petroleum products are branded "Union Certified."

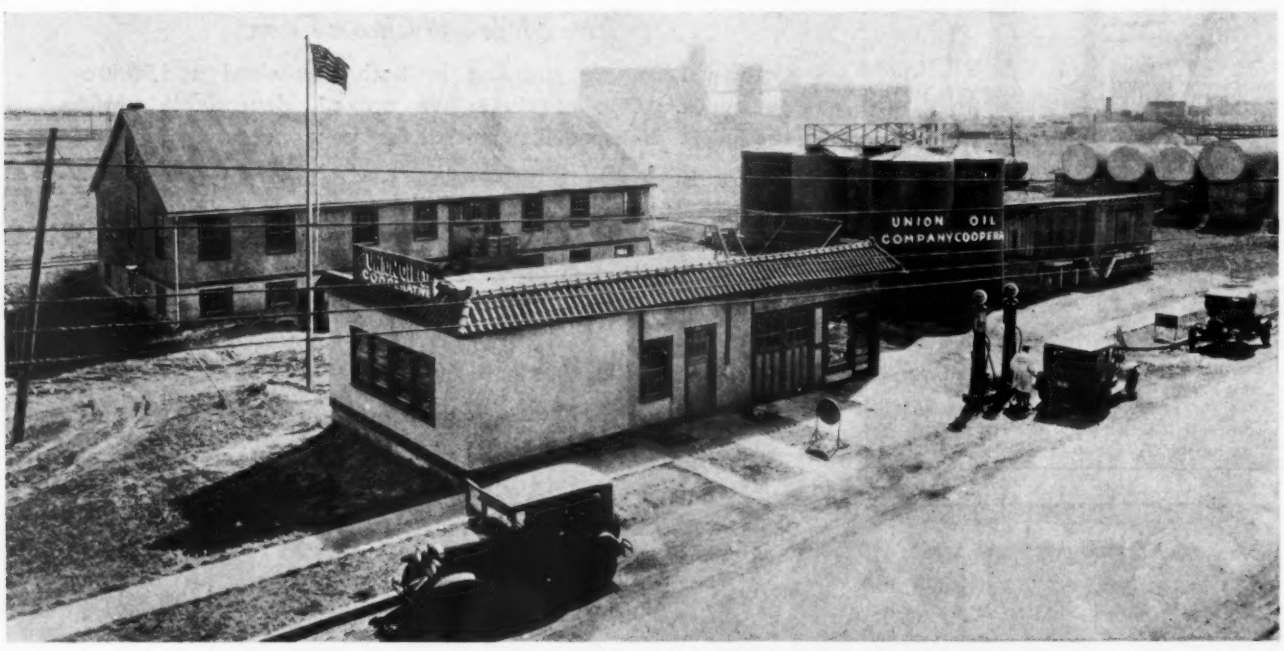
A recent questionnaire among the member companies showed 93,870 stockholders, aggregate paid in capital of $1,203,930, aggregate surplus of $533,663, and an aggregate profit for last year of $451,200.

The Union Oil Co. is managed by Howard A. Cowden, also president, and his financial interest in the company is limited to 20 per cent of the stock. The company is working with the Farmers' Union and the Farmers' National Equity Union in establishing the co-operative oil companies.

The Farmers' Union has about 1,000,000 members. It markets co-operatively the farmer's grains, live stock, and produce, and engages in selling such items as flour and mixed feed, and in some places lumber and implements. Membership dues are $2.75 a year, to the national organization. The Farmers' National Equity Union is a similar organization, engaged in about the same business; but there are no dues, each local organization financing itself.

To assist the local co-operative oil companies the Union Oil Co. has several service men on the road. These men advise in matters of policy and operation of the company, but final action is taken by the local company's board of directors.

Financing the co-operatives in this group is through sale of common stock to members of the Farmers Co-operative organization at $25 a share. The dividend on this stock is limited to 8 per cent a year.



Bulk and compounding plant of the Union Oil Co. in north Kansas City

A typical bulk plant of the farmer's co-operative group owning the Union Oil Co. This plant is the Peetz Consumers Oil Co., Peetz, Colorado

Some plants have as few as 100 stockholders, others have from 500 to 600. Management of the plant is by a board of directors, usually of five members.

These local co-operative oil companies in turn own one or more shares of the common stock of the Union Oil Co. Representatives of the local co-operatives attend the Union Oil Co.'s annual meeting to vote their stock. Each company has one vote in declaring dividends and in amending the by-laws, but in electing directors each share has one vote.

Profits made by the local co-operatives are divided three ways. First, at least 10 per cent must be set aside for reserves until this fund equals half the capital stock. Second, dividends on common stock are declared, not to exceed the 8 per cent a year. The balance of the profits is divided among the members as patronage dividends.

The bulk oil plants are established in conjunction with existing local co-operative elevators, and the profits from all the businesses are pooled in declaring patronage dividends. Members receive their patronage divided on the total profits not from each of the divisions. The plan is similar to that of a department store under one management; a profit may be declared for the year although some departments showed a loss and the burden may be carried by other departments.

Profits made by the Union Oil Co. are distributed in the same manner as those made by the local co-operatives. At least 10 per cent is placed in reserves until this fund equals half the capital stock. Then not more than 8 per cent is paid on the stock, and the balance is distributed as a patronage dividend among the stockholding companies.

While Mr. Cowden, president of the Union Oil Co., believes the farmer co-operative oil company is a permanent factor in the distribution of petroleum products, he does not believe in painting a pretty picture of huge profits to be derived from such a sales organization. He believes the co-operative can earn a substantial profit for its members, but that it will not make them exceedingly wealthy. In talking to farm groups about co-operative oil companies he reduces probable profits to a concrete example. He finds out the cost of some local public building, such as the school, or the town hall, and illustrates profits by showing how long it would take for reasonable patronage dividend to pay for such a building.

Four classes of bulk plants are sold by the Union to the local co-operatives. The smallest has two tanks with a total capacity of 27,000 gallons and recently has been selling at $1,573.67 f. o. b. Kansas City. The largest has three bulk tanks with a total capacity of 44,000 gallons which recently has been quoted at $2,123.33.

Equipment in addition to tanks includes unloading pump and motor, 350-gallon truck tank, tank loading crane and connections, one 5-gallon funnel, one 5-gallon truck can and one 5-gallon measuring bucket.

The tank equipment is offered subject to 2 per cent discount for cash in 10 days and the remainder takes a 1 per cent discount. Credit terms demand 25 per cent down including a 5 per cent carrying charge on the entire amount and payment within 12 months, installments bearing 7 per cent interest.

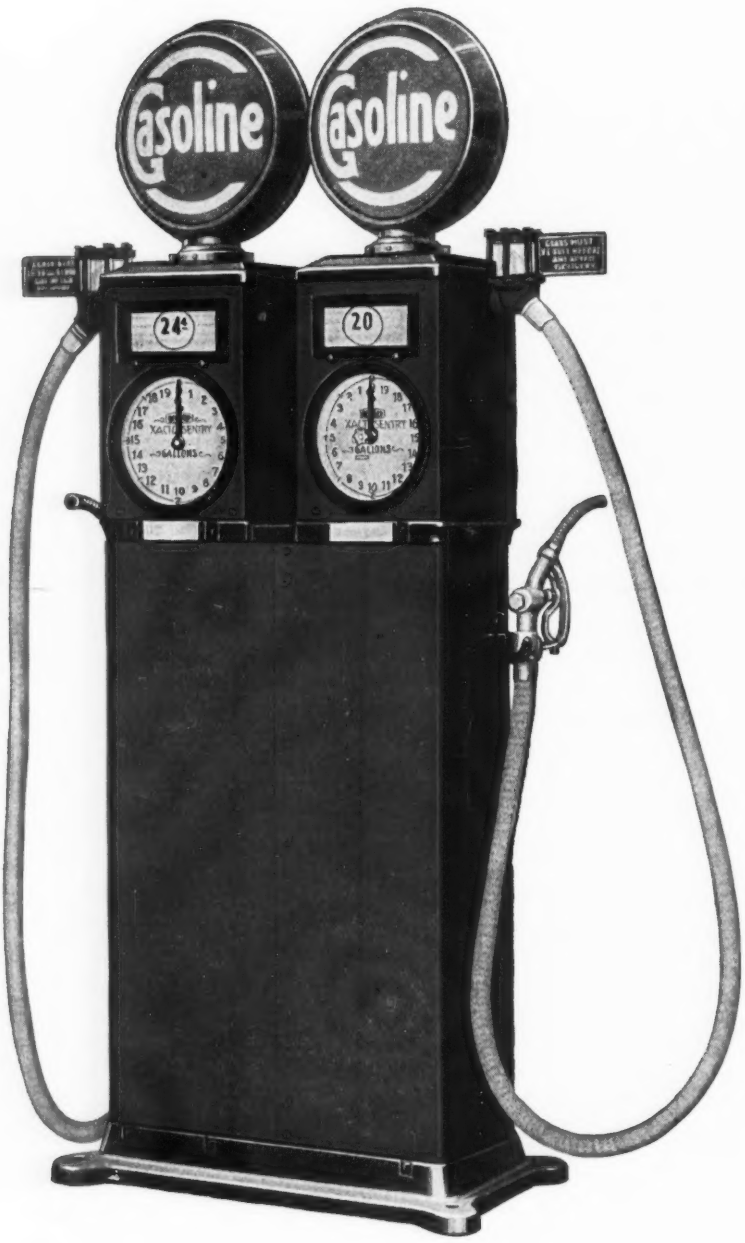
Gilbert & Barker Mfg. Co., Springfield, Mass., has placed on the market what it claims to be the only filter-funnel for assuring clean, pure, aviation gasoline for the airplane.

Its three distinct features are the elimination of all foreign matter from motor fuel; safety, providing a metal-to-metal contact which eliminates fire hazard and a quick shut-off valve on the discharge tube which stops the flow of gasoline instantly, preventing overflow of tank; and speed of gasoline delivery, the filter-funnel passing fuel from cans, hand pumps or motor pumps, without backing up.

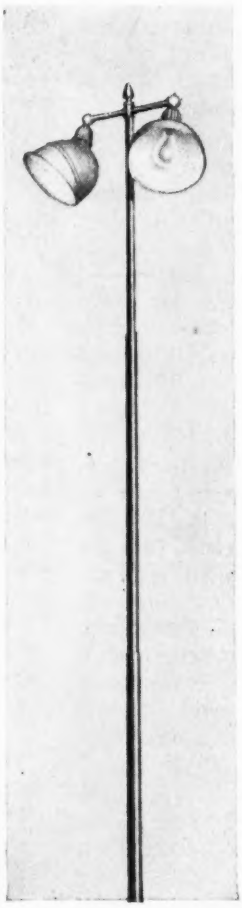
TULSA—Crude oil deliveries of the Prairie Pipe Line Co. in August totalled 5,324,834.62 barrels the company announced. This was a daily average of 171,769 barrels. In July the average daily deliveries were 155,200 barrels.

A proved line of up-to-the-minute equipment to build sales...increase profits...and improve service

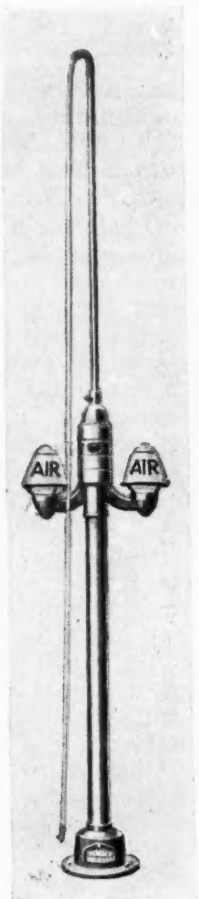
Choose the right equipment...for it plays a big part in successful marketing. To build sales and profits and improve service, Bowser offers a complete line of equipment that *is* right! All have been thoroughly field-tested and their merchandising ability, accuracy, efficiency and dependability definitely proved.



The new TWIN Xacto Sentry is sturdily built---accurate and attractive. The exclusive design permits the use of any color combination for the grades dispensed. Unquestionably the "king" of Twin dispensers.



The Twin Floodlight---designed by illuminating engineers. Neat, attractive, efficient. A proved builder of night sales.



The Sentry Air Tower---keeps the hose off the ground, always! Simple, neat, efficient. Can be had with lights and water connections.

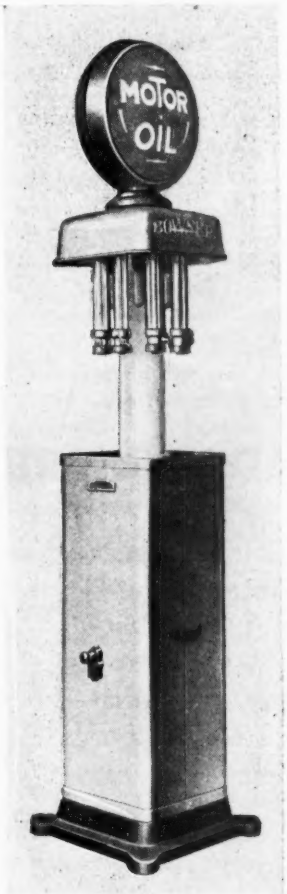
S. F. BOWSER & COMPANY, Inc.,
1302 Creighton Ave., Fort Wayne, Ind.,

We want to increase our profits and improve service Tell us more about

Name _____

Address _____

XACTO SENTRY Single and Twin FOUNTAIN OF ILLUMINATED OIL SENTRY AIR TOWER TWIN FLOODLIGHT AND XACTO METER



Xacto Meter, the positive displacement meter. Hair line accuracy. The heart of Xacto Sentry. Used also for checking tank cars---truck fills---deliveries to stations.

The Oil Fountain. Serves eight oils ---illuminated display of oils at night. Clean, efficient---a proved oil sales builder.

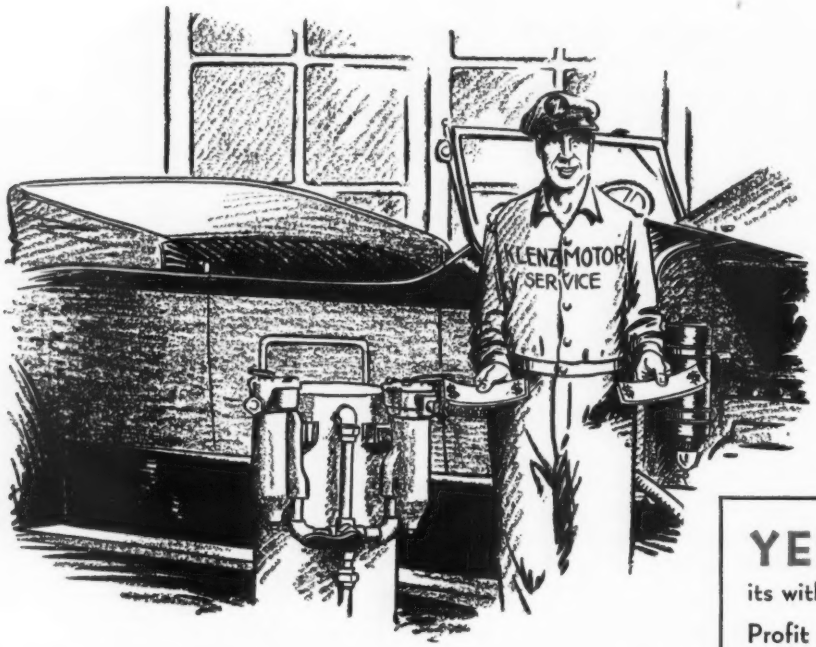
Xacto Sentry---the positive displacement meter pump. Sturdy, dependable, attractive. Quiet, long wearing, slow speed pump delivers gasoline speedily. Air Release eliminates all air. A "fine" pump at a low price.

All the equipment illustrated is of the highest quality, both in workmanship and materials···and made to sell at the lowest possible prices.

Forty-five years experience in manufacturing is back of them···all incorporate the best engineering practices to give stamina and long life···are designed to merchandise and build profits, and they do! Choose the right equipment by choosing Bowser. Get more information···use the coupon!

BOWSER ESTABLISHED 1885

S. F. BOWSER & COMPANY, Inc.,
1302 CREIGHTON AVENUE
FORT WAYNE, INDIANA, U. S. A.



YES, SIR! You have been passing up bigger oil service profits without Klenzmotor.

Profit on 6 qts. new lube oil---Average	75c
Profit on 2 gal. Flushing oil "	40c
Profit on each Klenzmotor crankcase job	1.15

NOW YOU CAN MAKE TWO PROFITS

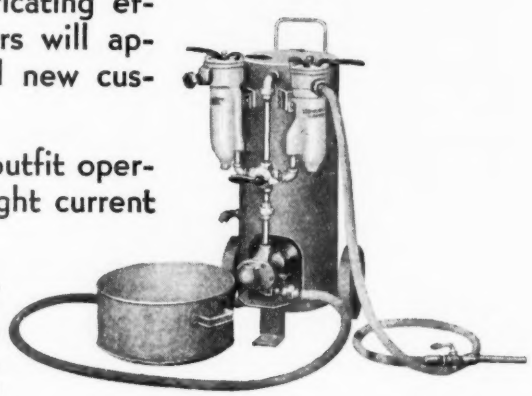
Additional profits also from Transmission and Differential cleaning with the one machine---Klenzmotor---gives *three* point service.

WHERE ONLY ONE WAS MADE BEFORE!

Klenzmotor---is not just another gear flusher---it is a *proven* service for thoroughly washing out the Oiling System, Crankcase, Transmission and Differential. Now you can make *two* profits on each cleaning job! Think of making 50 per cent more profit on each oil change! The keen oil service merchandiser will offer motorists the many advantages of Klenzmotor ---saving them many dollars in motor maintenance expense, and giving them maximum lubricating efficiency. Your regular customers will appreciate Klenzmotor service and new customers will be attracted by it.

One sturdy, compact, portable outfit operating on the regular electric light current ---does the whole job!

Klenzmotor will build up your profits, oil ratios and good will. The price is nominal---the possibilities large! Investigate today!



NEW HEATER

The new Klenzmotor Electric Heater is now available for heating the cleaning liquid. This Heater is easily installed on the standard electric Klenzmotor.

KLENZMOTOR CORPORATION
2311 Oliver Street, Fort Wayne, Indiana

We are interested in making TWO profits on each crankcase, transmission and differential cleaning job. Tell us more about Klenzmotor.

Name .....

Address .....

KLENZMOTOR

KLENZMOTOR CORPORATION

2311 OLIVER STREET ◆ ◆ ◆ FORT WAYNE, INDIANA

Religion Joined With Low Prices to Get Gallonage for Self Serve Stations

By Roger B. Stafford

N. P. N. STAFF WRITER

INDIANAPOLIS, Sept. 18. THE leading exponent of tank car and self serve gasoline in Indiana's capital is seeking the patronage of the church-going people of Indianapolis, a full page advertisement in the Indianapolis Times of Sept. 12 indicates, although it is thumbing its nose at public officials who are attempting to put self service out of existence.

The exponent is the Hoosier Petroleum Co., which operates and advertises under the nickname "Hoosier Pete." It operates five low price service stations in the city, two of which are self service. It is controlled by T. B. Jenkins of Richmond, Ind., who also controls the Peoples Nu-Gas Co. which opened the first self service filling station in Indiana in Cambridge City in March.

Under the caption "The Church" Hoosier Pete devoted half of its page in the Sept. 12 Times to the following sermonette:

"We are for the church. We mean organized forms or religion including all creeds. A confirmed atheist could be in favor of the church, for perfectly logical reasons. Basic prosperity is dependent mainly upon good government. Good government depends entirely upon the average intelligence of the governed. Intelligence in its broad sense is dependent upon sound moral convictions. (Live conscience.)

"You, Reader, may be intelligent in a popular sense, and even scorn religion. If such is the case, there is in your blood a moral intelligence passed on to you from those who held fast to religion. Down to you, they built well, but several generations of infidelity will scatter all that. Were the Church not backed by all that is good for our race, it would have passed out before we came in.

"Scornful people say that the church is run largely by emotional women, that is holds the country back. It does hold the country back; holds it back from one mammoth gin party, free love, and the hog wallow. This may sound strong. Perhaps, otherwise, you would not read it, especially if you need it.

"Criticise the ministers. They have to stand for much of that. But you will find them human, and, in the main, working patiently for the good of man. The average minister could live and work a thousand years, and not get for himself much of the world's goods. But we all enjoy the fruits of the church worker's work, whether we know it or not.

"Rave at the modern youth, the crime era. The church never sent youth into illicit adventures, nor a thief to rob you. Youth can learn little from those who neglect religion. When youth sees its elders taking seriously the things that really count, it will respond readily. So let's get on the inside, and help build up. If we have no religious convictions, our selfish reasons are enough.

"Of course, this is an advertisement. It is our desire to attract attention to our business. If in so doing, we can serve some other useful purpose, we are glad. If you consider us mistaken doing it this way, write and tell us. We will take it with an open mind.

The remaining half page is given to the business. Pete's U. S. Motor gas, 58-60 gravity, is priced at 15.9 cents, and Pete's red high test anti-knock at 16.9 cents. The latter is unbeatable at any price, said the advertisement. The addresses of the five stations completed the copy.

Hoosier Pete has been in business in Indianapolis four or five years. Its first tank car station now serves also as its bulk plant. This station is only about a block and a half from the Indiana capitol and had when built 60,000 gallons' storage capacity underground. The unloading rack is just inside the sidewalk of Missouri street and less than a block from Washington street the City's main east-west thoroughfare which is U. S. Route 40.

The newest station has self service and is in the wholesale market district southeast of the main retail district.

THE station which had caused the greatest comment and whose opening was following a prohibitory edict by the state fire marshall is also self service, is at Capitol and 22nd streets near an important residential district.

This station has 12 gasoline outlets, all under the control of one girl who sits in the station building at the rear of a large lot. Six outlets are connected with each of two gasoline meters inside the station. The girl sells the gasoline, works the controls, and is, all in all, the heart of the enterprise.

However, service is offered for women because some women do not care to handle a gasoline hose. This service is done by men who also look after oil sales which are said by observers of the station's business to run below the average for filling stations. This station requires truck deliveries from the downtown bulk plant.

The price at Hoosier Pete and

The Lightning Grease Liquefier is a Machine that performs miracles on the service station cash register by the quick, easy, efficient manner in which it cleans out every bit of the old, hard, cold grease and dirt accumulations in the transmission and differential making possible a complete refill. Station Owners say "Lightning" is the biggest volume builder they ever had in their stations.

Customers are delighted. They tell others and come back for more. They're glad to pay a case charge of fifty cents or more because they know the job's well done.

"Lightning" is a handy, efficient, portable machine that shoots hot, live steam right into the case. In a jiffy the interior is clean and dry. You'll certainly like it better than any method you've ever tried or seen.

Many Uses For Those Who Feature Service

Nothing like hot steam for thawing frozen pumps, radiators, oil lines, oilers, etc. Saves time, brings you business and quickly pays for itself.

Get ready *now* to offset that cold weather slump in business with this *EXTRA PROFIT WINNER.*

Write us today for full details

WARNER MFG. CO.
Minneapolis, Minn.

Portable
Inexpensive
Easy to operate

The LIGHTNING LIQUEFIER
for COLD CONGEALED GREASE

other low price stations was the cause of the recent reduction in gasoline prices at Indianapolis stations from 20.2 cents a gallon for regular gasoline to 17.9 cents a gallon. Indiana oil men say the general price reduction has lowered the gallonage of the low price stations because motorists will not drive far out of their routes for a cent or 2 cents a gallon. Tax figures are not available on gallonage since the general price reduction.

No effort has been made by the state fire marshal to make any arrests under his order prohibiting the dispensing of gasoline or other inflammable liquids at public service stations by persons other than the owner of the station or his agent.

Peoples Nu-Gas Co. has obtained a temporary restraining order against the marshal in a court at Richmond. This action for a permanent restraining order will be argued shortly.

At Cambridge City, the Peoples station is meeting with cent for cent competition from the Wade Oil Co., a Pure Oil distributor. Wade has two stations in the town which is on Route 40. One station is opposite the Peoples station. Peoples offer low prices and self service. Wade offers the same low prices with self service. When Peoples opened its station Wade lost its gallonage. It is said the company has now regained it.

Only True Anti-Knock Gas May Be Colored Red

BISMARCK, N. D.—The oil industry was reminded of North Dakota's law, which went into effect July 1, governing anti-knock gasoline by a recent letter from the state oil inspection department.

The law requires that only true anti-knock gasoline may be colored red, red being specified as it indicates the product is dangerous on improper usage. Conversely the law prohibits the coloring of any gasoline which does not meet the state's standard of anti-knock.

The sale of "dopes" or "gasoline improvers" with unsubstantiated claims is prohibited by the law.

New Stations Building

Note: Material used in this column is taken principally from newspapers. NATIONAL PETROLEUM NEWS assumes no responsibility for its accuracy. Headquarters of companies and addresses of individuals are given wherever possible.

The list as published from week to week cannot be looked upon as indicative of the relative extent to which stations are being built in various parts of the country.

Service Stations

East St. Louis, Ill.—Phillips Petroleum Co., Phillips Bldg., Bartlesville, Okla.

Lima, O.—J. J. Rankin & Son.

Toledo, O.—White Eagle Oil & Refining Co., Federal Reserve Bank Bldg., Kansas City, Mo.

Omaha, Neb.—Independent Oil & Gas Co., Philtower Bldg., Tulsa.

Plattsmouth, Neb.—Continental Oil Co., Ponca City, Okla.

McCook, Neb.—Joe King, Junction City.

Kenmare, N. D.—John Bowman.

Farmington, Minn.—Sinclair Refining Co., Conway Bldg., Chicago.

Bonduel, Wis.—John Westphal.

West Salem, Wis.—Rudolph Matiak.

St. Paul, Minn.—Standard Oil Co. of Indiana, 910 S. Michigan Ave., Chicago.

Danville, Ky.—Standard Oil Co. of Kentucky, 426 Bloom Ave., Louisville.

Wayne City, Ill.—Shell Petroleum Corp., Shell Bldg., St. Louis.

Jasper, Ind.—F. O. Brittain.

Bellevue, Mich.—The Texas Co., Chrysler Bldg., New York City.

Paris, Mo.—R. V. Delaney.

Lawrenceville, Ill.—Shell Petroleum Corp., Shell Bldg., St. Louis.

East Leroy, Mich.—Harold Christian.

Plymouth, Ind.—The Texas Co., Chrysler Bldg., New York City.

Greenville, Ill.—Lincoln Oil Refining Co., Robinson.

Louisville, Ky.—Southern Independent Oil & Refining Co., Huntington, Ind.

Knox, Ind.—Joe and Owen Cox.

Ft. Wayne, Ind.—Cities Service Oil Co., 1235 Marquette St., Cleveland.

Mt. Pleasant, Ia.—Continental Oil Co., Ponca City, Okla.

Topeka, Kan.—A. A. Armstrong.

Fargo, N. D.—Cities Service Oil Co., Commercial Bldg., Tulsa.

Minneapolis, Minn.—DeLaittre-Dixon Co., 202 E. Lake St.

Burlington, Ia.—E. S. Le Boutillier.

Menominee, Mich.—Barkhausen Oil Co., 107 Mather, Green Bay.

Waterloo, Ind.—Standard Oil Co. of Indiana, 910 S. Mich. Av., Chicago.

New Haven, Ky.—Errol Johnson.

Aurora, Ill.—Cities Service Oil Co., Commercial Bldg., Tulsa.

Columbus, Ind.—W. C. Robertson.

Paw Paw, Mich.—Theisen-Clemens Oil Co.

Marshall, Mich.—Moreland Oil Co., Adrian.

Spencer, Ia.—Mid-Continent Petroleum Corp., Cosden Bldg., Tulsa.

Vinton, Ia.—Independent Oil Co., St. Anthony.

Bemidji, Minn.—E. J. Baehr, Wadena.

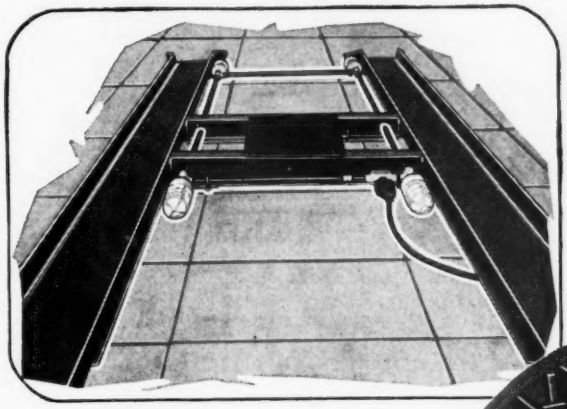
Atlantic, Ia.—Skelly Oil Co., Skelly Bldg., Tulsa.

Red Wing Minn.—Fred Kosec.

Grand Forks, N. D.—Cities Service Oil Co., Commercial Bldg., Tulsa.

Sioux Falls, S. D.—Sidney R. Jones, 1017 S. Summit Av..

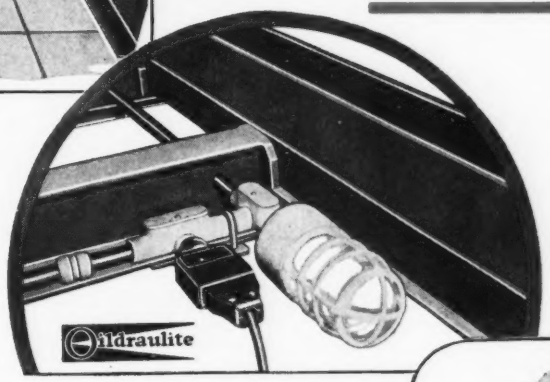
Oildraulic Revolving Lift



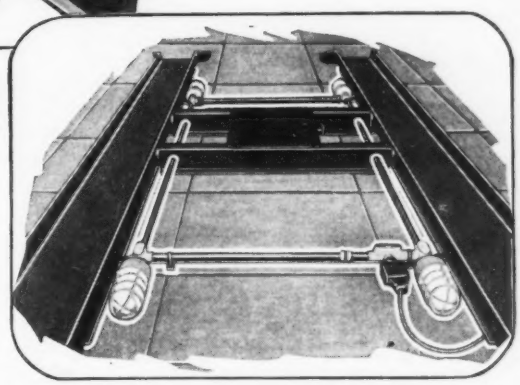
The OILDRAULITE is exclusive Oildraulic equipment. Flexible. "Daylight" wherever you want it.

Now the Electrically Operated Lift is also the Electrically *Lighted* Lift

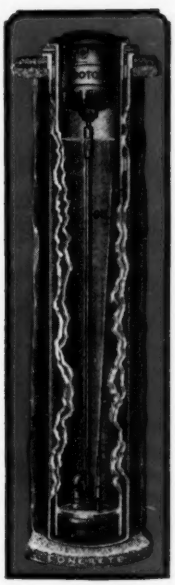
The Oildraulite makes the Oildraulic a 24 hour a day profit producer.



Each OILDRAULITE equipment consists of four Crouse-Hinds 60 watt lamps, vapor-proof, moisture-proof, short circuit-proof.



Can be attached to any Oildraulic or Airdraulic Lift now in use. Illuminates above and below the lift.



The Oildraulic Principle

Electrically driven—operates from ordinary lighting circuit—no extra wiring expense. No compressors, no underground plumbing, no valve-house—a unit within itself, motor and rotary pump inside ram. Works in oil and with oil.

ALL TYPES 2 OILDRAULICS (Free Wheel and Drive on); 2 AIRDRAULICS (Air-Driven, Free Wheel and Drive on); 2 Bus and Truck Types (2 and 3 Posts, respectively), and complete facilities for producing any other special sizes.

With a snap of the switch the Oildraulic Revolving Lift leaped into leadership in economical super service work. Another snap of the switch—the OILDRAULITE attachment—brings hours of added profits every day. Daylight efficiency in, on, above and below your lift at all hours.

No profit shrinkage from gloomy days, "short" days. Your night staff goes out of the "red"—becomes productive—carries on with washing, greasing, oil changing, conditioning, regardless of the hands of the clock. Motorists welcome this time saver—servicing is as simple as the after supper barber shop visit. Busy trucks and fleets of commercial cars find your station the solution of the problem—proper maintenance at no expense to traffic routine. You sew up real gas gallonage!

The OILDRAULITE—exclusive Oildraulic feature—is attachable to any Oildraulic or Airdraulic lift now in use, at nominal cost. Is optional equipment on new models. Either way, it soon pays for itself and the lift besides. It is worth buying an Oildraulic model just to get this remarkable source for better earnings. With Winter months in the offing, there never was a better time to know that you need this remarkable producer of new profits—and to take the first step by sending the attached coupon.

OILDRAULIC LIFT—Built under U. S. Patents. 1552326—9-1-1925. 1644785—10-11-1927. 1689144—10-23-1928. 1689145—10-23-1928.

OILDRAULIC INCORPORATED

MEMPHIS, TENNESSEE

Most Complete Line of Automobile Revolving Lifts

REPRESENTATIVES *and* COMPLETE DISPLAYS *in all* PRINCIPAL MARKETS

Oildraulic, Inc., Dept. N.P.N.12
Memphis, Tenn.

Send, without obligation, full information on the Oildraulite. We { now have / do not } { an Oildraulic Lift— / an Airdraulic Lift.

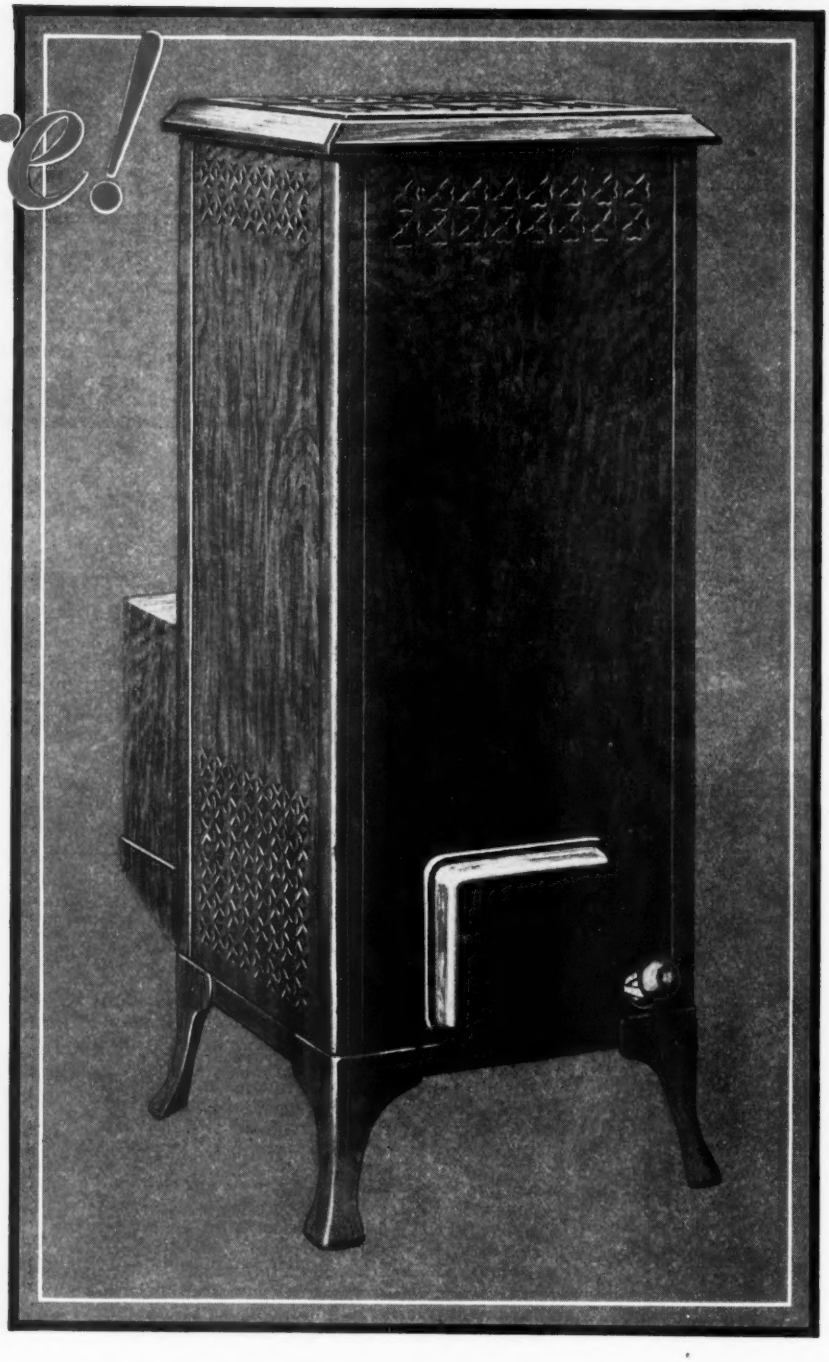
Name .....

Address .....

Town ..... State .....

It's here!

. . Important news for the Oil Industry



SUPERFEX — ideal heat for Service Stations, Garages and Field Offices . . . Does away with the bother of ashes. Heat is constant—unvarying. Burns No. 1 Furnace Oil or Kerosene.

Model No. 1005 (Illustrated) Beautiful Walnut porcelain enamel finish. No. 1003 Beautiful Ivory-Green porcelain enamel finish. No. 1001 Utility Model (Blue Steel) for any place where fine finish is unnecessary. All may be had with 5 gallon tank attached or with constant level valve for outside connection.

PERFECTION Superfex

Perfection opens *large* furnace oil market . . . . presenting an innovation—the new Superfex Circulating Heater—burning No. 1 Furnace Oil (Distillate) or Kerosene

PERFECTION STOVE COMPANY, closely related to the oil industry for over 40 years through the manufacture of kerosene-burning cookstoves, room heaters, water heaters and refrigerators, and oil burners for furnaces, now offers a circulating home heater.

The new Superfex Circulating Heater extends the market for furnace oils beyond the city and into the suburban and rural districts. It is a natural draft heater requiring no gas, electric or water connections. It sets up like a stove and lists at prices within the reach of all.

The last word in convenience

No longer need the home owner, store keeper or rural school teacher bother with the dirt, smoke and ashes of other fuels. Here is convenient, uniform heat—constant unvarying temperature—the flexibility, the easy comfort of oil heat now available for all.

Service-free — Trouble-free

Absolutely no moving parts to get out of order. The burner is simplicity itself. A vaporizing burner bowl at the base of a welded drum is the heat unit. A beautifully designed cabinet surrounding the heating unit furnishes the means of heat circulation. A simple turn of the fuel valve regulates the flame — low to high, instantly, depending on heat requirements. Anyone can operate it.

Proved by Perfection Engineers

Perfection engineers have placed 40 years of oil burning experience into the Superfex. It is unqualifiedly backed by the Perfection reputation for quality manufacture and fair dealing.

Oil Heat Extends Everywhere

Superfex enters a new unlimited field. Here is modern oil heat for homes or stores without central heating plants. Every home, shop or store now heated with a coal or wood stove will be modernized through the beauty and convenience of the Superfex. It's no bigger than a cabinet radio but it circulates roomfuls of heat.

A New Furnace Oil Market

Investigations point to a tremendous demand for this type of heater. The convenience of oil as a heating fuel has been sold to the public, but only now is available for the broad home market. Best results are obtained with No. 1 Furnace Oil (Distillate) End point 600° Specific gravity 36-40. We solicit the cooperation of the oil industry.

PERFECTION STOVE COMPANY, Cleveland, Ohio

CIRCULATING HEATER

PERFECTION STOVE CO.,
7607-B Platt Avenue,
Cleveland, Ohio.

Gentlemen: Please send me complete information on Superfex Heaters.

Name_____

Address_____

City_____ State_____

Satisfying All Needs of Motorist Is Trend in Oil Merchandising

By E. L. Barringer

N. P. N. STAFF WRITER

SANDUSKY, Ohio

DIVERSIFICATION of goods and services to provide everything wanted by the motorist at one retail outlet is coming in oil merchandising.

This prediction comes from D. G. Van Horn, general manager of the Monroeville Oil Co. In support of his prediction he cites recent expansion programs of large oil marketers in selling tires, batteries and accessories through company operated service station. For his own part, Mr. Van Horn has been guided by his belief in the trend, and accordingly has built his business.

The company's two main service stations illustrate the point. One is at Monroeville, O., on the federal highway crossing northern Ohio. The other is at Sandusky, O., on the main state highway along Lake Erie.

The Monroeville Oil Co., since it was started in 1924, has made a play for the truck driver's business. It considered what services and merchandise this trade desired, and incidentally the wants of the tourist are also closely allied.

After gasoline, motor oil, and lubrication, the truck driver seeks food and a place to sleep. If he wanted them the Monroeville Oil Co. was quite willing to provide them.

Food ranks as a necessity with all men, but it is a supernecessity with the truck driver. His appetite is large. It requires about eight meals every 24 hours. He differs in his sleeping habits too. Sleep is taken in small quantities along the road. He will pull into a station, tell the attendant to service the truck, and grab a bite to eat. Then he wants a cot; the attendant is asked to call him at a certain time, and he turns in for a few hours sleep.

Both these service stations are on the border of the towns. The one at Sandusky is within the city limits, but out in the open fields. This location is well fitted for the truck driver, and it fits into the tourist's method of finding a lunch room.

Mr. Van Horn does not favor a restaurant with a big station in a city. If his company establishes one-stop stations in town they will not have food departments.

D. G. Van Horn
General manager of the Monroeville Oil Co., who believes the oil merchandising trend is to sell all the goods and service wanted by a motorist at one place of business

"In a city a restaurant at a station is only competing with other restaurants," said Mr. Van Horn. "It is logical to ask the business or professional man to leave his car at your station for service. But I doubt if he would come over to patronize your lunch counter.

"I believe tourists prefer to stop for gasoline on entering or leaving a city, not in it. Consequently a station out in the country, yet on the border of a city, is a good place to sell gasoline and a meal to the tourist."

At the Sandusky station, built three years ago, the restaurant is in a separate building from the service station. About 80 persons can be served at once. Along one side is a dining room, open to the public for dinner, but available for private affairs by special arrangement. Tables are provided in a room across the front with service at all hours. A small counter has been placed in an alcove off the front dining room.

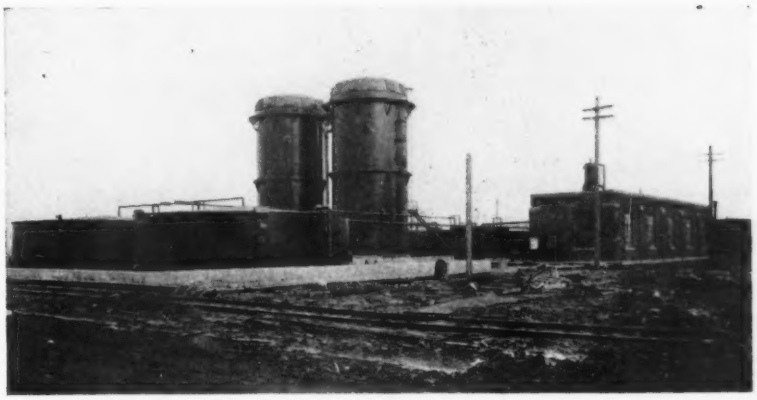
The building and equipment is owned by the oil company but management is in the hands of a restaurant operator. Mr. Van Horn supervises to insure satisfactory service. Thus the oil company derives a monthly rental from the restaurant without the responsibility of operation.

Sleeping quarters are provided truck drivers above the service station. The building is two stories high. The driver's pay for their food, but there is no charge for sleeping.

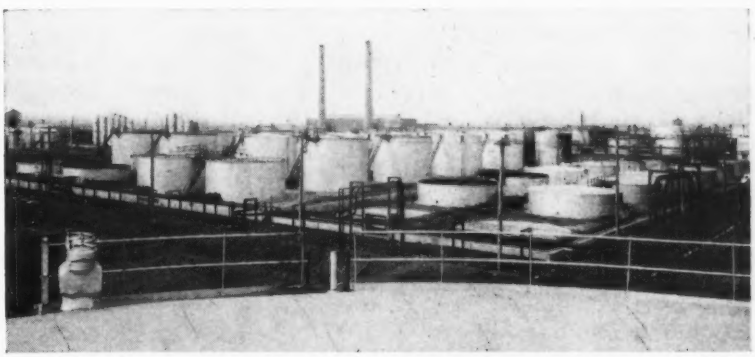
Another feature of serving the truck trade is to have a 24 hour station. The doors are never locked, in fact the keys are lost. This feature also is becoming more important with the tourist trade, Mr. Van Horn observes.

All night tourist traffic is in-

McClintic-Marshall



Refinery



Equipment

Isn't it significant that such prominent companies as Standard Oil Company, Gulf Refining Company, Shell Oil Company, Vacuum Oil Company and, in fact, most of the *world's* leading oil refining companies utilize McClintic-Marshall steel construction?

The inference is plain . . . McClintic-Marshall construction and service *must* be universally satisfactory to warrant this wide confidence.

McClintic-Marshall Company

PITTSBURGH, PA. *Offices in Principal Cities*

A panoramic view of a country service station, developed on the merchandising policy of offering at one location everything the motorist desires. It is the Red Gable service station of the Monroeville Oil Co., near Sandusky, O. Petroleum products, accessories and food are offered now. Tires are to be stocked soon. Then plans call for tourist cabins and a miniature golf course

creasing past his Sandusky station. The highway has been improved each year, until most of it is three-lanes wide from Cleveland to Sandusky, and is being extended to Toledo, O. Numerous summer resorts and amusement parks along the south shore of Lake Erie swell the volume of tourists, and more are travelling at night.

In line with his giving the public what it wants Mr. Van Horn is stocking tires at his stations. Expansion of the Sandusky station for the next few years is to follow the tourist's wants. Although the station was erected for the truck driver trade the tourist patronage has increased. To serve this trade overnight sleeping accommodations will be offered by building cabins. A trade puller is a contemplated miniature golf course.

In addition to stocking the merchandise and services wanted by the motorist the oil jobber, in Mr. Van Horn's estimation, must make his place available. That is he must recognize that highways are faster today. The old saw about "here he comes there he goes" is a cold, hard fact that the station operator must face.

This element of today's speed was considered in locating the Sandusky station. The Monroeville station is sufficiently near the built-up part of the town that the motorist is not traveling as fast as on the open road.

Coming from the east the Sandusky station, by its high canopy and its sign, is visible for about two miles. From the west it comes into view after rounding a curve half a mile away. The motorist has time to think twice about his gasoline and food before he is in front of the station.

The site has 4½ acres, with 1390 feet fronting the highway. Wide drives, 480 feet long start well back from the buildings on both sides and make it easy for the driver to swing in. Since truck traffic is heavy the drives are of gravel. Seven thousand tons of crushed stone was laid, rolled in 9-inch layers, and dusted in.

The station is visible at long range in the night. In front are floodlights to illuminate the drives and buildings. The canopy is 15 feet high, covered with red tile roof. Floodlights are being installed at the rear of the station building, directed on the tile roof, so that it will be seen for even longer distances at night. The lights will make the roof look as if newly painted.

Appearance also is an important salesman for the station catering to the tourist. To use Mr. Van Horn's words. "The tourist figures that if a company has made an investment in a good station its products will be good too." And to repeat an oft told fact, clean rest rooms are necessary.

The highways are getting crowded with roadside stations, Mr. Van Horn observes, and the tourist has a wide choice in selecting a place to stop. With the rush of the road, and the desire to get someplace quickly, the station that will succeed, in his opinion, is the attractive, well located station that will sell the motorist what he wants, all needs for the motor and man at one place.

On the subject of merchandise desired by his trade, both truck driver and tourist, he finds the local trade will buy his brands, the tourist the national brands. Ninety per cent of his oil sales are Strate-Penn, his own brand. In line with giving the public what it wants he carries Fleetwing gasolines, both Ethyl and the regular grades. The company is distributor for three counties for Veedol. The tires to be stocked are of a national brand.

Gasoline at the Sandusky station is stored in above-ground tanks, direct from tank cars. The underground tanks at the station, some distance from the tank car storage, are direct connected, and the gasoline is metered as it passes from one storage to another. No trucks are operated from this station but three trucks are from the bulk plant at the Monroeville station.

Business of the truck driver was the first love of the Monroeville Oil Co. and it continues to account for its portion of the company's profit.

Now the truck driver's business is peculiar in many ways. The driver usually is in business for himself. He owns his own truck. He pays his own bills. He accepts shipments from a forwarding company in one city to transport it to another.

To obtain his business the Monroeville Oil Co. decided it was necessary to have an all night station and road service.

82 YEARS' EXPERIENCE WITH HIGH PRESSURES AT YOUR SERVICE

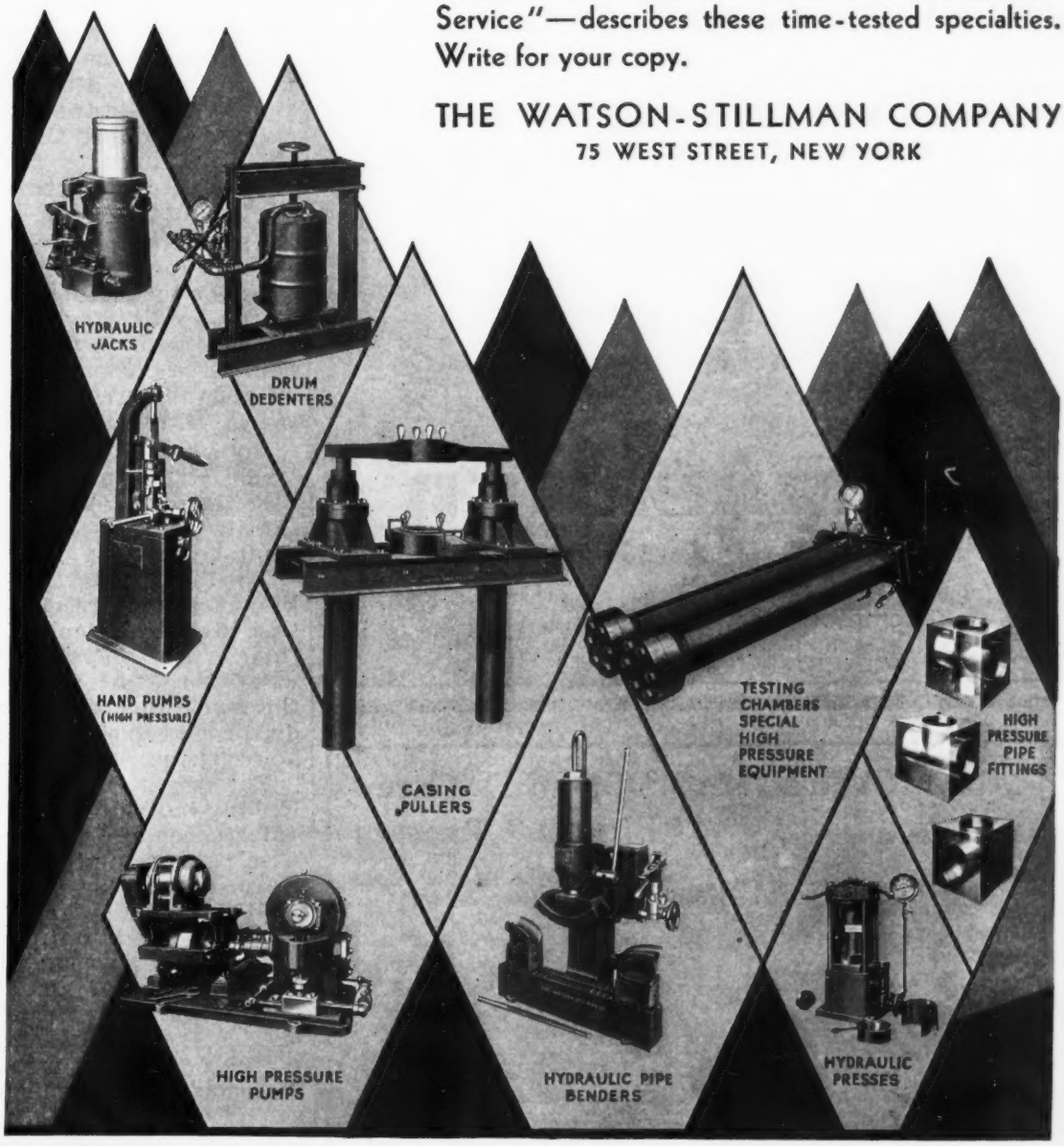
Inspect our exhibit at Booths 47-48, California Bldg., International Petroleum Exposition. Our engineers in attendance will gladly place their experience at your service.

SINCE 1848, The Watson-Stillman Company has concentrated on the development, manufacture and improvement of devices for using and controlling high pressures. It has the mastery of its specialty born of an unequaled experience.

Now, Watson-Stillman offers to the oil industry — producers and refiners — a line of High Pressure Equipment unequaled in scope and unapproached in the experience it embodies.

A new catalog, just issued — "Watson-Stillman High Pressure Equipment for Oil Field and Refinery Service" — describes these time-tested specialties. Write for your copy.

THE WATSON-STILLMAN COMPANY
75 WEST STREET, NEW YORK



1848 WATSON-STILLMAN HIGH PRESSURE EQUIPMENT 1930

SEE *the Strongest 122 ft. Rotary Derrick in the Field*

at the

OIL EXPOSITION

October 4-11

The

WERTZBERGER

Tubular Derrick

1. Made of Double Extra Strong MECHANICAL PIPE
2. No Relegs Required for Extra Deep Well Drilling
3. Since our Derricks Have Been on the Market NOT ONE Has Ever Required Servicing

WERTZBERGER

Derrick Company

Thompson Bldg., Tulsa, Okla.

Five More SWEETLANDS and Three "Blotter" Presses

One of the largest refineries on the Atlantic Coast recently ordered five large Sweetland Pressure Filters for contact work and three "blotter" presses for final clarification.

Oliver United provided both types of filters.

OLIVER UNITED FILTERS INC.

SAN FRANCISCO, Fed. Reserve Bank Bldg. NEW YORK, 33 West 42nd St.
CHICAGO, 565 Washington Blvd. LONDON, W. C. 1. 150 Southampton Row
PARIS, 63 Ave. des Champs Elysees. T. L. Genter, Concessionaire

When the passenger automobile traffic decreases as the night progresses, the truck traffic increases. Clear roads after midnight allow the truck to make better time. So while other service stations are dark the Monroeville Oil Co's. two stations are busy with trucks.

Road service is necessary because trucks will run out of gasoline, and they will get laid up in the country. A register is another necessity for the station. Drivers register in and out. In case of delay the forwarding company can trace shipments quickly by calling the stations.

Lack of curiosity on the part of station attendants is necessary also. Truck drivers often are uncommunicative and resent questions regarding their business.

A small oil stove, a coffee pot, and a bowl of doughnuts for the drivers comprised the first restaurant at the Monroeville station. They brewed their own coffee and helped themselves to the doughnuts. A full fledged restaurant succeeded this humble beginning.

Sales to truck drivers are mainly for cash. If Mr. Van Horn is acquainted with the driver credit may be extended for one trip. If the bill is not paid on the next trip through, off goes the credit. But most of the driver's are on a cash basis.

To hold the truck driver's trade Mr. Van Horn believes there are two requisites—know the driver, and service him with what he wants.

The drivers like to stop where they are well received, where the station attendant knows their wants. Frequently they will let the attendant go over the truck and park it while the driver gets some food and a few hours sleep.

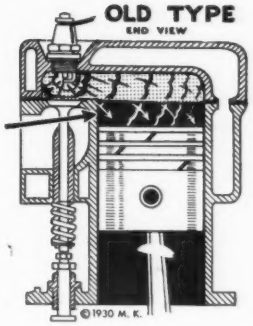
The driver is a greasy, rough looking individual, but he has a quick sense of criticism, and he does it constructively, Mr. Van Horn, has observed.

"Usually an irritated customer will walk out, not telling you what is wrong, and will not come back," he said. "But if a truck driver doesn't like service, your products, or the way he has been treated he'll tell you. He doesn't nurse a grouch. He comes right out and makes it plain so you know where you stand with him."

Common Sense and 40 Cents...

Today . . . there are practical, mechanical reasons why a 40c Motor Oil is real common sense economy

Diagram A, using ordinary gas, shows the piston "hammered" down the cylinder less than three-quarters of an inch, by the quick explosion.



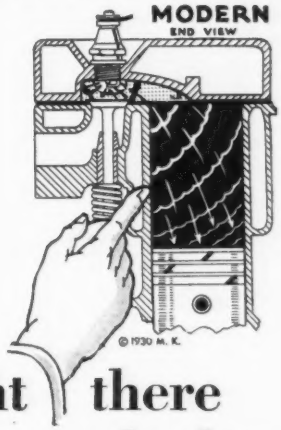


Diagram B, using modern anti-knock, *slow-burning* gas . . . the piston is now "pushed" all the way down the cylinder—exposing *eight times* greater surface to the scorching flame of combustion.

Right there is where most oils are cooked to death!

What happens? The oil film breaks down—cylinder walls and pistons become scored and dry—compression escapes—power is lost.

Why Galena Stands Up!

Galena starts where other fine oils leave off—100% Pure Pennsylvania.

Then by Galena's 61-year-old Process, it is built-up, reinforced, toughened, fire-proofed, with Plumboleum, in perfect solution.

Plumboleum makes a denser, more compact, greater heat-resisting oil film—that won't break down nor cook out. The Plumbo Film unites with the metal by physical-chemical union, (adsorption*) forming a permanent, fire-proofed film which intense heat *won't destroy.*

Naturally, this constant protection means less friction, LESS WEAR—LESS REPAIRS.

Most of your customers are quality buyers. Will they buy Galena from you or someone else? Step into line . . . read the handwriting on the wall . . . give your customers the quality they want. Write for information today!

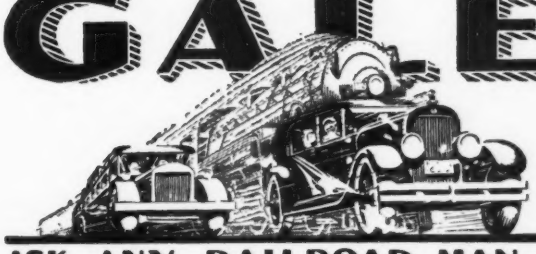
From Franklin, Penna.

GALENA OIL CORPORATION

Sales Headquarters: Willoughby Tower Building
8 South Michigan Avenue ... Chicago, Illinois

Pioneers in Safety and Service Since 1869

GALENA



PROCESSED OILS

ASK ANY RAILROAD MAN - *HE* KNOWS *GALENA*

*ADsorption—The action of a body in condensing and holding a soluble substance upon its surface.

©1930 M. K.

IT'S A MATTER
— OF —
PRINCIPLE

When you buy our products you secure the combined excellence of good materials and craftsmanship wrought by skilled conscientious workmen —the use of special precision machinery sustains our high standards of accuracy yet lowers the cost.

ACCURATE DIMENSIONS AND GOOD APPEARANCES CHARACTERIZE . . . OUR OUTPUT . . . . .

WE ARE SPECIALISTS in Model and experimental work and Quantity Production of small parts . . . also . . . MANUFACTURERS OF ELECTRICAL AND MECHANICAL DEVICES . . . and . . . INSTRUMENTS OF PRECISION . . .

BART PRODUCTS CO.
INCORPORATED

Precision *Machinists*

BARTLESVILLE
OKLAHOMA

ON THE LAZY BENCH

Her Thought

Dot: "So you're not going to marry that Mr. Rirthson after all. Why not?"

Helene: "Well, father thinks he isn't rich enough and mother thinks he is too old for me. Aunt Mary thinks he is too good looking to make a good husband, and Uncle Joe says he has heard things about him."

Dot: "But what do you think about it?"

Helene: "O, I think I ought to wait until he asks me."

—*The Gas Line.*

* * *

Cooling the Dogs

Charles Reynolds—"I notice you are wearing your stockings wrong side out."

Steno.—"Yes, my feet got warm, and I turned the hose on them."

—*The Diamond*

* * *

Modern Ways

"Mother," asked the Modern Child as she was being put to bed, "what are prayers?"

"Prayers, darling, are little messages to God."

The Modern Child grew thoughtful.

"Ah, I see," she said at last, "and we wait until bed time to send them so as to get the night rate." —*The Gas Lines.*

* * *

Lady: "Could I see the captain?"

First Mate: "He's forward, miss."

Lady: "I'm not afraid. I'm from Warren, Pa., and I've been out with lots of boys there."

—*The Gas Lines.*

* * *

An old Negro was arraigned before a justice on charge of assault, and the Justice asked him if he wanted a lawyer to defend him.

"No, Judge," he replied, "I don't want no lawyer, but I sure would like a couple of good witnesses if you have 'em."

—*The Gas Lines.*

A Notable Crowd

Speaker: "And where, I ask you, is Julius Caesar? Where is Attila the Hun? Where are Moses, Oliver Cromwell, Charlemagne, Hannibal?"

Enthusiastic Usher: "Stand up, boys, so's the gentleman can see you!" —*The Gas Line.*

* * *

Sermon In Stones

A western evangelist makes a practice of painting religious lines on rocks and fences along public highways. One ran: "What will you do when you die?"

An advertising man came along and painted under it: "Use Delta Oil. Good for Burns."

* * *

Home Life

Mother's in the kitchen washing out the bottles; Sister's in the pantry taking off the labels; Father's in the cellar mixing up the hops; Johnny's on the front porch watching for the cops.

—*The Gas Lines.*

* * *

Ain't It the Truth

Jerry and Bill were watching a friend jack up his car, preparatory to changing a tire.

Jerry: "Funny thing how a little jack will raise up a big car, isn't it?"

Bill: "Yes, and it takes a lot of jack to keep it up, too."

—*The Gas Lines.*

* * *

The Board of Safety has issued the following instructions for driving from the back seat: "HOLD TIGHT AND SHUT UP." —*The Gas Lines.*

* * *

"How long have you been married?"

"Long enough to learn that there are some things you can't say with flowers."

—*The Gas Lines.*

* * *

Epitaph: "Here lies an atheist—all dressed up and no place to go." —*The Gas Lines.*

* * *

Judge: "You are charged with speeding at sixty miles an

hour, smashing a telegraph pole, going through a plate glass window and injuring six people. What have you to say for yourself?"

Lovely Young Lass: "Doesn't the twelve dollars I paid for my license entitle me to any privileges at all?"

—*The Gas Lines.*

* * *

Due Precaution

Mother: "Have you told Edward that we shall disinherit him if he marries that girl?"

Father: "I've done better than that. I've told the girl!"

—*The Gas Line.*

* * *

Enough Am Plenty

Mose: "Say, Rastus, lemme present ma wife to yuh!"

Rastus: "Naw suh! Boy! Ah got one of mah own!"

—*The Gas Line.*

* * *

Manager: "I am afraid you are ignoring our efficiency system, Smith."

Smith: "Perhaps so, sir, but somebody has got to get the work done."

—*The Gas Line.*

* * *

First Contractor: "Did you enjoy your vacation?"

Second Contractor: "Yes, but there's nothing like the feel of a good desk under your feet again."—Heil Quality News.

* * *

Chinese Patient (over telephone): "Doc, what time you fixee teeth for me?"

"Doctor: "Two-thirty, all right?"

Chinese Patient: "Yes, tooth hurty me all right, but what time you want me to come?"

—Heil Quality News

* * *

Farmer: "In your job here, what do you do?"

Train Caller: "I call trains."

Farmer: "Well, call one for me. I'm in a hurry."

—*The Gas Line.*

* * *

Doctor: "Sit down, sonny. You have shown good manners long enough."

Small Boy: "It ain't good manners, doctor. It's a boil."

—*The Gas Line.*

HAYS GAS ANALYZER

Adapted to field use on account of its combined accuracy and portability

Outstanding Features:

1. Light weight! Compact!
2. Glass parts arranged to prevent breakage. Heavy one-piece molded glass absorption pipettes combine visibility with extreme ruggedness.
3. Chemical containers are of molded hard rubber instead of glass. Being opaque they protect the chemical from deterioration caused by light.
4. Analyzer can be carried in any position without spilling or mixing the solution. Plugs permanently attached to case.

REID VAPOR PRESSURE BOMB for Natural Gasoline

The standard instrument for testing vapor pressure of natural gasoline.

Outstanding Features:

1. A tapered thread connection between chambers which can be made up tight by hand.
2. Supplied complete with a vapor tension gauge of regular test gauge quality.
3. Samples can be taken by immersion in open tank or under pressure from closed system.

See Our Exhibit
Booths 8 & 9, Scientific & Technical Bldg.

THE REFINERY SUPPLY CO.

621 E. Fourth St.
Tulsa, Okla.

3404 Main St.
Dallas, Tex.

The Business of Oil Production

published by Johnson, Huntley and Somers, makes it possible for the beginner in the oil-producing business to obtain a working knowledge of the best methods and of their application.

The man who is experienced will find that it will answer practically any question that may arise on the business side of his enterprise.

The cost of this book is $3.50 and may be obtained by sending your check to—

National Petroleum News, 1213 W. 3rd St., Cleveland, O.

A message from an OIL MINDED t

An impartial Summary of the possibilities in TIRE SALES

JUST why, how and when should you enter the tire business as an adjunct to your present filling station business?

In a very comprehensively and carefully studied method, Pharis presents a complete visualization of what you can expect through this new trend in tire merchandising.

This prospectus is yours for the asking—the most complete and thoroughly unbiased study of one of your most vital problems.

The Pharis Tire & Rubber Company, Newark, Ohio:
—We would like to know if we should add a department of tire sales —why, how, when? Please send free prospectus.

Name .....

Address .....

PHARIS

tire manufacturer to TIRE MINDED *oil men*

FEW tire manufacturers—if any—have dedicated their business to the making of tires on a basis that conforms so ideally to the requirements of the oil marketing industry as has the Pharis Tire & Rubber Company. The very character of its merchandising program, enabling Pharis Tires to be sold at prices to compete with leading tire merchants of every description, naturally presents a made-to-order proposition for you.

You have no competition with tire dealers selling the same make of tires—you have the opportunity to identify your business with the name PHARIS as you can do with no other name in tires. To be successful in the selling of tires, you must be working with a tire manufacturer that is *oil minded*—not one who is simply looking for additional outlets for his products with no specialized interest in the oil marketer . . . It is not the policy of the Pharis Tire & Rubber Company to sell brands of tires, too numerous to mention, in direct competition with its customers.

Get the full facts from PHARIS—compare these with the facts and advantages of any other tire manufacturer—then, decide for yourself!

The Pharis Tire & Rubber Co., Newark, Ohio

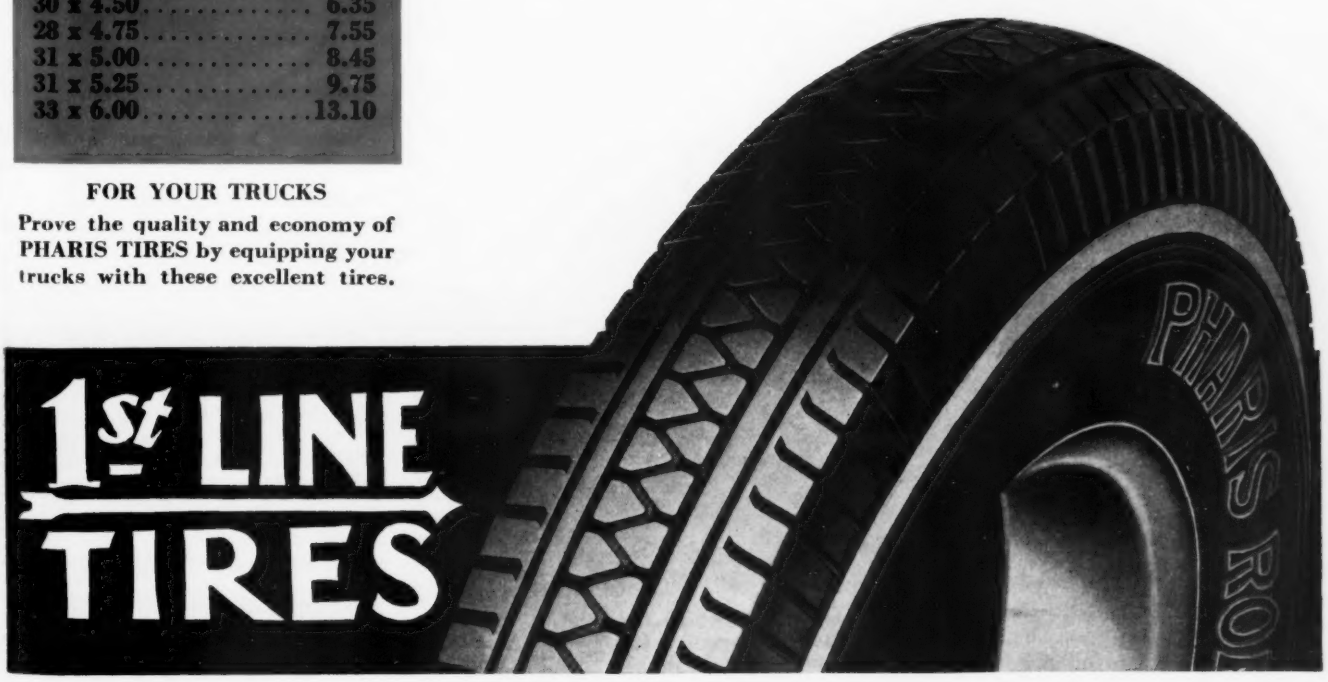
A FEW TYPICAL PHARIS RETAIL PRICES

These prices—all first line tires—get the attention of the motorist, bringing sales with generous profits.

29 x 4.40	$5.55
30 x 4.50	6.35
28 x 4.75	7.55
31 x 5.00	8.45
31 x 5.25	9.75
33 x 6.00	13.10

FOR YOUR TRUCKS

Prove the quality and economy of PHARIS TIRES by equipping your trucks with these excellent tires.



Automatic Dispenser Serves Gallon Cans of Gas

LOS ANGELES

FORGETFUL California motorists need no longer walk darkened streets in search of an all-night service station when faced with an empty gas tank in the wee small hours.

Several months ago Union Oil Co. installed the first experimental automatic gasoline dispenser on the Pacific Coast at one of its Los Angeles stations. Plans are now under way to manufacture the machines on a commercial scale.

The initial test proved satisfactory, both as an aid to motorists and, just as important to the service station operator, as a business getter.

Since the first unit was built, slight changes have been made in the design, which are not included in the accompanying photograph. Most important of these innovations is a plate steel curtain that will inclose the base and pedestal of the machine. This is to prevent damage to the compartment covers and to make it impossible to close the covers over an empty compartment.

The machine, stocked with ten one-gallon cans of gasoline, is placed prominently in the service station yard, usually near the curb of a main traveled highway. It is equipped with an electric sign advertising the emergency service offered.

To operate the automat, a push plunger is oriented over the center of a filled compartment and a 50-cent piece inserted in the slot. This coin releases a spring allowing the plunger to be operated, which in turn permits the metal compartment face to drop and gives free access to the can of gasoline inside.

Each can is stenciled with the name of the company and address of the service station, and carries the notice that a refund will be made upon return of the empty.

Although designed primarily to help motorists caught short of gasoline, this automatic vending machine gives promise of being a boon to the station. Station operators using the experimental devices reported an appreciable increase in gallonage turnover. Motorists returning the empty can usually took the precaution to fill his tank and in many instances became a steady customer.

The suggestion has been made that the gasoline dispenser be placed in downtown parts of major cities to afford stranded automobilists a quick and easy method of getting gasoline. Such emergency units would be maintained by nearby service stations.

All rights to this vending machine, which was designed by Charles Gray, Los Angeles, have been acquired by the engineering firm of Whealton and Townsend, Inc., 694 Subway Terminal Bldg., Los Angeles.

Polly Moran, of moving picture fame, explaining what to do when caught short of gasoline. The emergency gasoline dispenser is shown with one compartment emptied

Foreign Opportunities

Reserved information may be obtained from the Bureau of Foreign and Domestic Commerce, Washington, and its district and cooperative offices by duly registered firms and individuals upon written request by opportunity number. The Bureau does not furnish credit ratings or assume responsibility as to the standing of foreign inquirers; the usual precautions should be taken in all cases, and where no references are offered it does not necessarily imply that satisfactory references could not be given. Correspondence may be in English unless otherwise stated.

46536.—**Gilsonite asphalt,** Hamburg, Germany, agency.

46560.—**Asphalt, benzine, gas and lubricating oils,** Hamburg, Germany, purchase.

46561.—**Asphalt,** Hamburg, Germany, agency.

46576.—**Paraffin,** Hamburg, Germany, purchase or agency.

46691.—**Paraffin,** Hamburg, Germany, agency.

46741.—**Mineral and cylinder oils,** Hamburg, Germany, agency.

46742.—**Gasoline,** Oshawa, Canada, purchase.

46931.—**Gasoline and industrial oils,** Brussels, Belgium, purchase and agency.

47105.—**California non-combine petroleum,** London, England, agency.

47106.—**Lubricating oils and greases,** Bombay, India agency.

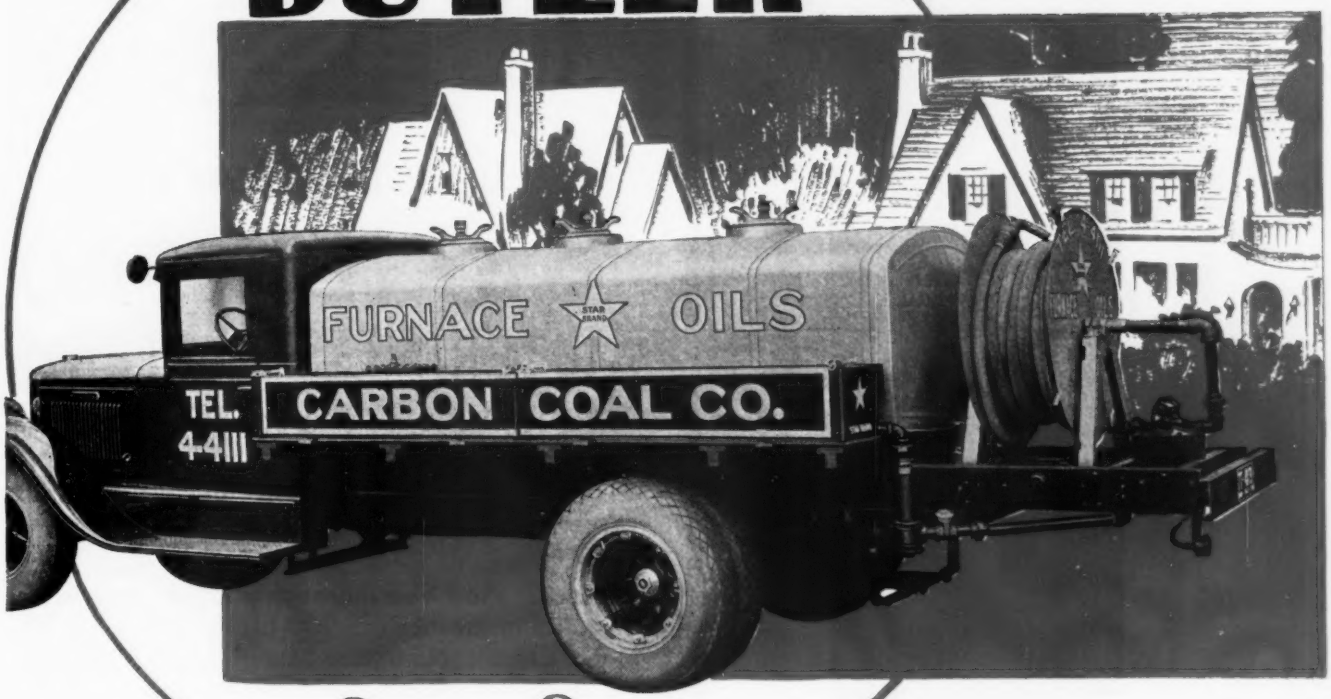
47071.—**Paraffin,** Cali, Colombia, purchase.

47175.—**Kerosine,** Tegal, Java, purchase.

46867.—**White Industrial oils,** Bombay, India, agency.

QUICK ✣ CLEAN ✣ METERED
FUEL OIL DELIVERIES

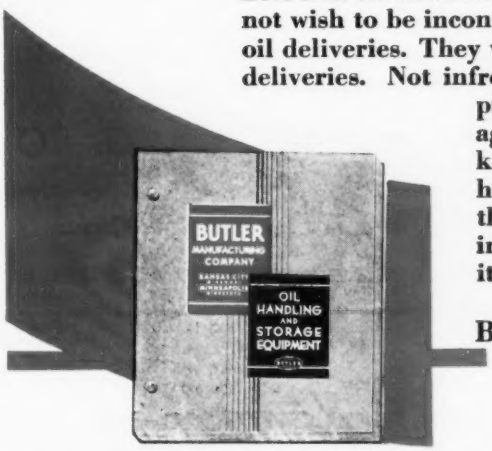
BUTLER



Super-Service

FUEL OIL DELIVERY UNITS

FOLKS who install automatic home heating do so largely because of its cleanliness and carefree characteristics. They do not wish to be inconvenienced by slow fuel oil deliveries. They will not tolerate messy deliveries. Not infrequently they are suspicious of short gallonage. Super-service, in keeping with carefree home heating, is what they expect. Their growing patronage warrants it and many suppliers are equipping to give it to them . . . The Butler Super-Service fuel oil delivery unit takes the fuel from tank compartments by power from the truck motor, passes it through a measuring meter, to the delivery hose through a swivel connection. The hose reel revolves to unwind and re-wind the delivery hose which never needs to be disconnected. A full load is delivered in a few minutes without leaving a trace on the customer's premises. The recording meter affords protection to both your customers and yourself. Economical delivery and customer satisfaction is the net result.



Super-service Fuel Oil Delivery Units comprise one of hundreds of transportation, storage, handling and dispensing items of oil equipment on which this book gives valuable buying information. Requests for it from more than 3,000 officials have been fulfilled.

BUTLER MANUFACTURING COMPANY

1241 Eastern Ave. Kansas City, Mo.
941 6th Ave. S. E. Minneapolis, Minn.

STEEL BUTLER PRODUCTS

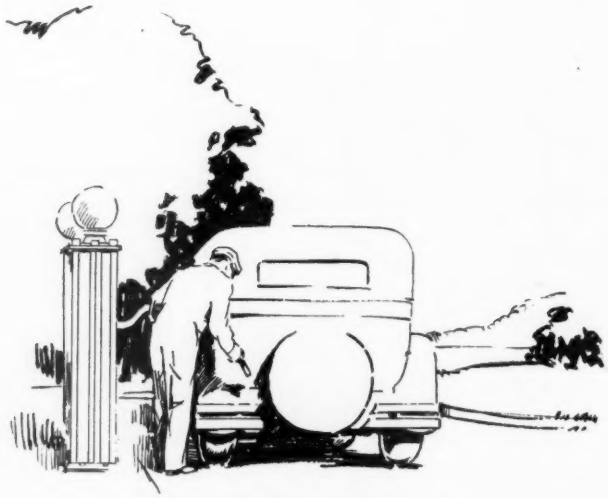
Send one copy of the new 80 page, loose leaf book of Oil Equipment.

Firm Name _____

By _____ *Title* _____

Address _____

_____



Rapidayton's
SERIES 900
METERING SYSTEMS

TO HAVE served the industry for a quarter of a century—to have participated in its remarkable development—to have grown with it calls for this expression of earnest appreciation.

What a wealth of experience such service has afforded! And how thoroughly is that experience reflected in the SERIES 900 LINE. Here's a full line of Electrical Gasoline Metering Systems, capably designed, soundly engineered, sturdily built, and sensibly priced. Meter Systems of both the disc and positive displacement type. Square, round and tandem design—single and twin units—single, double and quadruple dials. Complete in every detail.

And a full series of visible type Gasoline Pumps with eye or mechanical measurement, Piston Type Pumps, Underground Storage Tanks, Fittings, Accessories, and Air Compressors rounds out the line, thus enabling marketers to secure complete service from one dependable source.

THE DAYTON PUMP & MFG. CO.
Dayton, Ohio, U. S. A.

Sales Representatives in Principal Cities

Illustrated above are the Model 900-S (single dial) and Model 910-S (double dial) square design electrically operated gasoline metering systems. A comprehensive bulletin illustrates and provides full engineering details of this and all other equipment in the RAPIDAYTON Line. Send for it.

Rapidayton

Oil Trademarks For Copyright

THE following are trademark applications pertinent to our field pending in the United States Patent office which have been passed for publication and are in line for early registration unless opposition is filed promptly. For further information address National Trade-Mark Company, Barrister Building, Washington, D. C. trademark specialists.

As an additional service feature to its readers, this journal gladly offers to them an advance search free of charge on any mark they may contemplate adopting or registering. You may communicate with the Editor of this Department, or send your inquiry direct to the National Trade-Mark Company, stating that you are a reader of this journal.

"SPECIMA." Ser. No. 284,534. Fortuna-Werke Spezialmaschinenfabrik A.-G., Stuttgart-Cannstatt, Germany. For lubricating oils and greases and power-transmission oils.

"NASCO." Ser. No. 299,484. Busfield Oil Company, Inc., Haverhill, Mass. For gasoline and household fuel oil, lubricating oil, and illuminating oil.

"WHITE FIRE." Ser. No. 302,289. Tank Car Station Inc., Buffalo, N. Y. For gasoline.

"RED FIRE." Ser. No. 302,289. Tank Car Stations Inc., Buffalo, N. Y. For gasoline.

"PANCO." Ser. No. 302,330. Panther Oil & Grease Mfg. Co., Fort Worth Texas. For lubricating oils and greases.

"PAR-EX." Ser. No. 300,048. Bulk Service Stations, Inc., Chicago, Ill. For motor-fuel oils and gas lubricating oils and lubricating greases.

"CRYSTAL," 100%, PENNSYLVANIA, etc. Ser. No. 301,161. The Crystal Oil Works, Oil City, Pa. For gasoline, kerosine, illuminating oils, lubricating oils, and lubricating greases.

"HI-CO." Ser. No. 295,794. Irving Oil Co. Ltd., St. John, New Brunswick, Canada. For high-compression gasoline.

"IOKA." Ser. No. 295,796. Irving Oil Co., Ltd., St. John, New Brunswick, Canada. For high-compression gasoline.

"BASO." Ser. No. 300,996. Standard Oil Co. of New Jersey, Wilmington, Del. For lubricating oil.

"RUSTO-GO." Ser. No. 302,643. Rust-Go. Mfg. Co., Oklahoma City, Okla. For penetrating lubricant.

"GRAPHILENE." and design. Ser. No. 303,012. Arthur F. Snipes, doing business as The Snipes Co., Oklahoma City, Okla. For oils and greases.

"SUNRISE." Ser. No. 303,555. Sunset Pacific Oil Co., Los Angeles, Calif. For gasoline, lubricating oils, and greases, and kerosine.

"LIPEOMETER." Ser. No. 302,912. Schwarz Laboratories, Inc., New York City. For measuring device for determining the percentage of fat or oils in a substance containing the same.

"HAVOLINE, SAELUBE." Ser. No. 294,225. Indian Refining Co., Lawrenceville, Ill. For lubricating oils and greases.

"BIG W," W. Ser. No. 297,045. Wadhams Oil Corporation, Milwaukee, Wis. For lubricant.

The Motoring Public KNOWS ▼ ▼ ▼ ▼ ▼

ANTI-KNOCK GASOLINE AS COLORED GASOLINE — RED, BLUE, GREEN, OR WHAT HAVE YOU?

DYKEM
Gasoline Colors

DYKEM GREEN BN (deep sea shade)
DYKEM GREEN N (bluish grass shade)
DYKEM GREEN YN (medium emerald shade)
DYKEM GREEN GN (bright emerald shade)
DYKEM BLUE (deep sky shade)
DYKEM BLUE G (bright blue shade)
DYKEM PURPLE R (bright purple shade)
DYKEM VIOLET (deep violet shade)
DYKEM RED (scarlet shade)
DYKEM RED B (bluish rose shade)
DYKEM ORANGE Y (reddish orange shade)
DYKEM ORANGE GY (yellowish orange shade)
DYKEM YELLOW N (lemon shade)

With a DYKEM GASOLINE COLOR

You Can Make Your Anti-Knock Gasoline Also Inviting and Attractive.

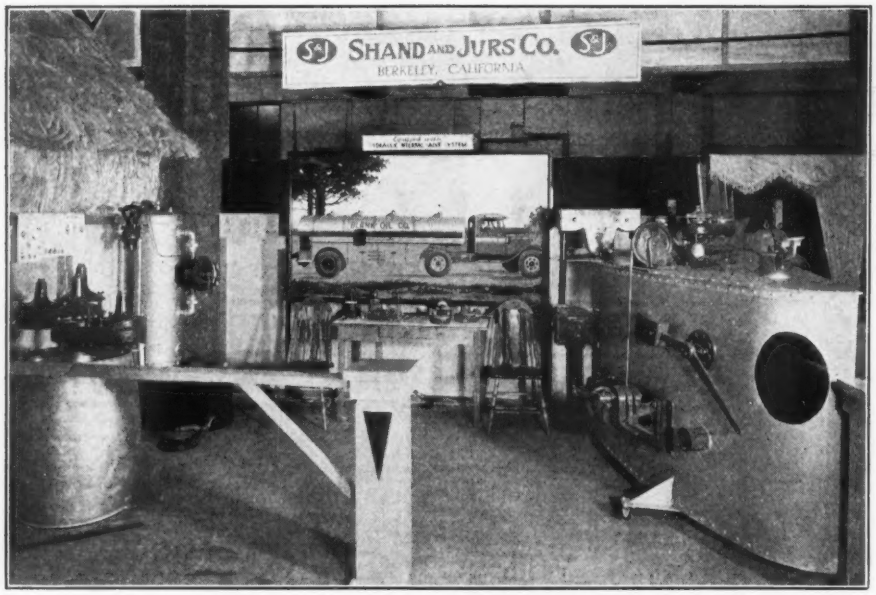
Procedure is simple. Cost is low.

DYESTUFFS & CHEMICALS, INCORPORATED
2301 N. Eleventh St.
St. Louis, Mo.

Cross Cracking Plants

THE M. W. KELLOGG CO.
225 Broadway • New York

Tulsa, Okla.....Philtower Bldg.
Los Angeles, Cal.....1031 So. Broadway



Vacuum and Pressure Vent Valves
Automatic Tank Gauges
Gauge Hole Covers
Sheave Brackets
Cable Winches
Internal Tank Safety Valves
Liquid Level Controls
Diaphragm Valves
Hydraulic Internal Safety Valves for Truck Tanks

SEE SPACE 37, PETROLEUM EXPOSITION, TULSA

General Distributors
Shand and Jurs Sales Co.
Denver, Colo.

Shand and Jurs Sales Company Representatives
New York, N. Y., 30 Church St.
Dallas and Houston, Texas
Lake Charles, Louisiana
Tulsa, Okla., 216 E. Brady St.
Los Angeles, Calif., 530 West 6th St.
Ploesti, Roumania, Strada Golesti No. 9

SHAND AND JURS CO.

Office and Factory S&J BERKELEY, CALIF.

Gasoline And Other Motor Fuels

by Ellis and Meigs, is a book which gives a complete survey of the field and a description of practically every process of making gasoline and most other motor fuels of promise or prominence.

The price of the book is $10. Just send us your check and we will mail a copy of it to you.

National Petroleum News, 1213 W. Third St., Cleveland, Ohio

YOUR SIGNS ARE SALES EQUIPMENT

STANDARDIZE IN SIZE & DESIGN
15 Years of Sign Experience Helps Us To Help You.

Write For Suggestions and Prices.

Metal Signs Framed or Unframed
Lacquer—Paint Enamel—Smalts
Porcelain Enameled Signs
Sidewalk Stands, Hanging & Erecting Equipment

We specialize in Oil Company Signs

JOSEPH C. HODGES SIGN CO.
6898 Easton Ave. St. Louis, Mo.

NEW EQUIPMENT

Klenzmotor Corp., Fort Wayne, Ind., is making a cleaning machine, known as the Klenzmotor, for washing crankcases, transmissions and differentials. It is designed for applying the Osborne process for washing out the interior of enclosed mechanisms, and can also be used for cleaning clutches, spring spraying and the exterior of motors.

This machine circulates six gallons of flushing oil per minute into the parts to be cleaned. Oil is forced into the fill pipe of the motor, from where it thoroughly circulates through the crankcase before returning to the drain pan under the car. From here it is picked up by the pump and, after passing through a filter, is again forced into the motor, thus providing a continuous cycle of operation.

* * *

Bulletin No. 141 describing and illustrating Jenkins standard bronze valves with the one-piece screw-over bonnet and slip-on stay-on disc holder has just been announced by Jenkins Bros., New York. The valves are made in globe, angle, cross and check types for all standard services. The globe valve is designated as Jenkins Fig. 106-A.

The one-piece screw-over bonnet in combination with the slip-on stay-on disc holder is an entirely new departure in bronze valve design.

* * *

A new bearing metal in the form of a self-lubricating bearing has been invented by W. C. Wilharm of the Westinghouse research laboratories.

The new bearing can also be used with lubricant instead of the present oil-requiring bearing materials. If the supply, or film, of lubricant should for any reason become inadequate, this bearing is capable of resisting the heating action of friction for a considerable length of time by means of its own lubricating qualities.

The bearing is made by mixing one or more metallic powders with one or more materials yielding a soapy substance.

The Shar-Pit
ALL STEEL
REG. U.S. PAT. OFF.

For Oil Draining, Lubricating *and* General Service Underneath the Car

THERE is no danger or fear for the motorist who drives on the SHAR-PIT. It is right on the ground level and the guard rail safely guides the car into proper position with little effort on the part of the driver. This element of safety, together with its convenience, makes it easy for drivers, particularly women, to use the SHAR-PIT frequently. The SHAR-PIT has proven to hundreds of owners its value as an additional source of profit and as a means for attracting more customers.

Because of its moderate price, its many utility and safety features, its simple construction and easy installation, the SHAR-PIT combines so many advantages that even the smallest station can hardly afford to be without one.

The SHAR-PIT can be placed in space otherwise unused and there is no additional cost except the excavating. No concrete work is necessary and the investment is quickly returned from increased sales and profits.

Owners say: "Greatest Profit Maker in Service Station Equipment."

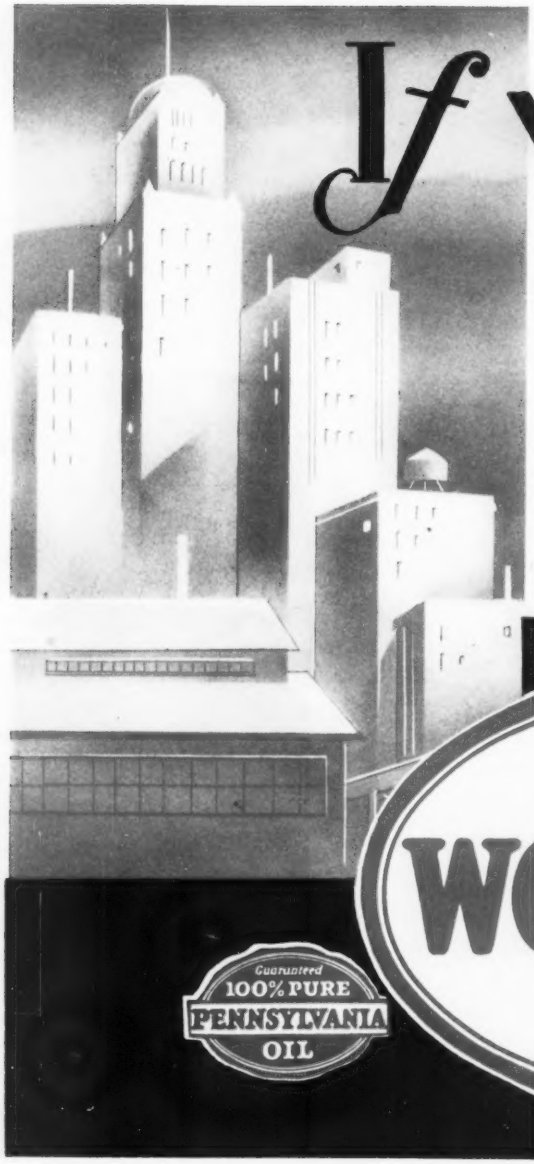
Send for Bulletin P3

SHARPSVILLE BOILER WORKS COMPANY

SHARPSVILLE, PA.

Showing installation of 16′ Shar-Pit, 5′ deep with Cover.

Shipped Complete in One Unit ~ Ready to Set in Ground



If WOLF'S HEAD *New York's*

Just think what it

TRADE MARK REG. U.S. PAT. OFF.

WOLF'S HEAD OIL

A REVELATION IN LUBRICATION

Guaranteed 100% PURE PENNSYLVANIA OIL

NOW that WOLF'S HEAD'S consumer demand has branched out in so many directions, the opportunity presents itself to many marketers to capitalize on this situation. If you have not been satisfied with your present volume of sales, repeat business and public acceptance for your oil, get the facts about WOLF'S HEAD.

Remember, WOLF'S HEAD, with 20 years' clean-cut record behind it, is one of the country's oldest and leading motor oils in the automotive, aviation and motor boat fields. 100% Pure Pennsylvania Oil—double distilled—Sharples de-waxed—high flash test—low cold test.

WOLVERINE-EMPIRE REFINING CO.
Wolverine Division
51 Madison Ave., New York City

Clip this coupon and learn the interesting story of WOLF'S HEAD OIL . . . and mail it to
WOLVERINE-EMPIRE REFINING CO.
51 Madison Avenue, New York City

Name_____

Company_____

Address_____

WOLVERINE REFINING

can HEAD *tough market*

it can do for you

IT is said that anybody or anything which can prosper in the New York market can get along anywhere. This is particularly true of motor oils.

In popularity and volume of sales, WOLF'S HEAD MOTOR OIL ranks the highest in New York City, successfully competing against all of the leading brands of oil. And, WOLF'S HEAD success has traveled to other parts of the country, taking hold in a way that means more money for distributors and dealers everywhere.

ADVERTISEMENTS IN SATURDAY EVENING POST

WOLF'S HEAD OIL is backed by national advertising and localized sales helps. There is plenty of opportunity for other dealers in the country to prosper with this high grade product.

EMPIRE COMPANY

The companion to WOLF'S HEAD

ANTI-KNOCK
EMPIRE
ETHYL
ETHYL GASOLINE CORPORATION
GAS

The latest improvement in ETHYL Gasolines

Empire Ethyl Gasoline is more than a motor fuel resulting from the addition of Ethyl Compound to ordinary motor grade gasoline.

Empire Gas has many premium qualities even before the addition of Ethyl Compound.

It has a good knockless rating—high test—low end point—extra mileage—and runs uniformly accurate to specifications.

Other Empire products consist of Motor Grade Gasoline, Rubber Solvent, Naptha, Kerosene, Fuel Oil, Wax, Steam Refined Stock, Filtered Stock, Bright Stock, Neutrals and Greases.

WOLVERINE-EMPIRE REFINING COMPANY
Empire Division
Oil City Penna.

Clip this coupon and mail it to EMPIRE OIL WORKS, Inc.
(Check your interest)

- ☐ Empire Ethyl Franchise
- ☐ Empire Motor Gas. Franchise
- ☐ Other Empire Products

Name_____
Company_____
Address_____

Now's The Time To Consider

TRADE MARK

FISKE'S

Zero Cold Test GEAR LUBRICANT

Reliably Uniform; Consistently Good, with a reputation proved by experience and maintained by excellence of product.

Jobbers, be prepared to supply a cold weather gear lubricant you can wholeheartedly endorse. It is a business builder for you. Put up in standard packages under your own brand if you wish.

Send for samples and prices.

FISKE BROTHERS REFINING CO.

24 State Street, New York

Established 1870

Newark, N. J. - - - - *WORKS* - - - - Toledo, Ohio

OIL PRICE HANDBOOKS

HAVE you a complete record of REFINERY prices; TANK WAGON markets; EXPORT prices; CRUDE prices—

For quick reference and comparison with today's prices?

The OIL PRICE HANDBOOK is the only complete record of oil markets for a whole year, compiled in one handy volume for quick reference. Cloth bound—marginal index—9" x 6"—146 pages.

Oil Price Handbook for 1929...$7.50
" " " for 1928.....$5
" " " for 1927.....$5
" " " for 1926.....$5
" " " for 1925 } $6
" " " for 1924 }

Send for these OIL PRICE HANDBOOKS *now*, before they are all gone.

National Petroleum News, 735 Penton Bldg., Cleveland, Ohio

What Exhibitors Will Show at Tulsa

Received too late to classify

Allegheny Steel Co., 10 Oklahoma Bldg., display of Allegheny metal, Ascaloy comprising the entire range of chrome-nickel and chromium alloys for oil industry use where high resistance to erosion, corrosion and high temperatures is desired.

* * *

American Cable Co., 97, 98 Texas Bldg., four foot section of a 10-inch suspension bridge cable, samples of Tru-lay industrial rope, Tru-Loc fittings, flexible bolts, etc. In attendance will be R. L. Gormley, district manager, C. A. Perryman, sales manager, and Messrs. Jameson, Ulin, Hinkley, Worley and Wyatt.

* * *

Reed Roller Bit Co., Booths 13, 14 Texas Bldg., Type 31 rock bit and reamer combination, Type 31 double and single 3-point reamers, Barrett-Robishaw drilling-coring bit, wire line bit and full hole tool joints. The following will attend: Lock McDaniel, sales manager, Russell Giesey, Oklahoma manager, Dan Del'Homme, Oklahoma engineer.

* * *

Sun Oil Co. — Refiners-Marketers Bldg. spaces 52, 53—new extra heavy pale oil, with viscosity of 145-160 at 210 F., 3½ N.P.A. color. New way of tilting rack to show slow movement of a large air bubble will demonstrate this new product.

Demonstrator will operate continuously to show how Sun transmission lubricants are free from foaming. Samples of Sun oils and greases will be arranged so they appear illuminated.

* * *

Waukesha Motor Co. — Oklahoma Bldg., spaces 89, 90, 120, 121—five new power plants: two new Diesel engines, a six cylinder engine which is the largest built by the company, cable tool drilling unit and popular size smaller power unit.

Of the two new Diesels, the larger is a 225-250 horsepower, six cylinder, operated at 900-110 r.p.m. The smaller is a four cylinder engine, rated at 90-100 horsepower, operating at 950-1050 r.p.m. Special features include ease of installation, a special gasoline starting system permitting easy starting, non-clogging injector tips and L-head design with controlled turbulence.

* * *

Worthington Machinery Corp. of Oklahoma—own building in Block L—centrifugal pumps, power pumps, direct acting steam pumps, air compressors, multi-V-drives, steam turbines, gas engines and electric motors, primarily designed or modified to meet oil field conditions.

USE THE CORNERS, ALSO

Round tanks waste space that most service stations need. But in any size station the compact efficiency of MERIT Space-Saving Units makes them most desirable.

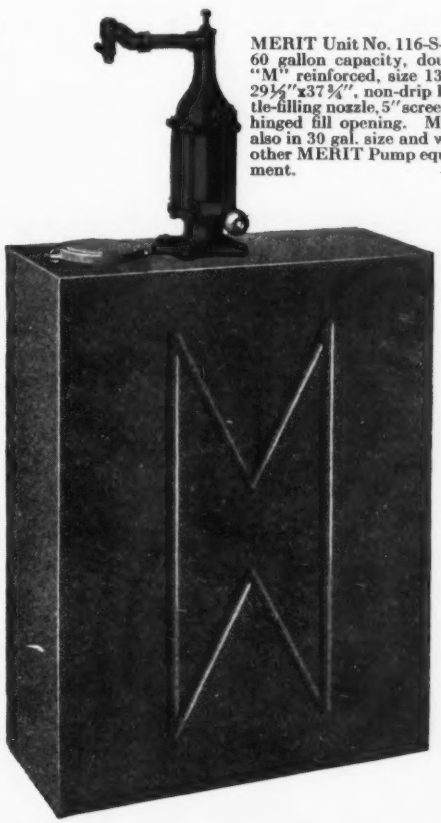
MERIT SPACE-SAVING OIL TANKS INCREASE STORAGE SPACE FOR THE SMALL SERVICE STATION . . .

SMALL service stations especially can't afford to waste even the corner space left vacant by round tanks. Turn it into valuable oil storage with MERIT "M" Rectangular Tanks.

You can put 7 of these units having 420 gallon total capacity in the same wall space as 4 round tanks holding only 240 gallons—a gain of 180 gallons! That's important in crowded quarters.

MERIT Tanks are *permanent* equipment. They are made of heavy sheet steel with fully welded heads (no mere spot welding and cementing). And the "M" side construction gives additional strength so that with very little inside bracing, bulging is made impossible. Rugged, rigid, with minimum weight. They far outlast ordinary tanks.

The coupon will bring you promptly the whole story of MERIT Oil Equipment.



MERIT Unit No. 116-S-60: 60 gallon capacity, double "M" reinforced, size 13" x 29½"x37¾", non-drip bottle-filling nozzle, 5" screened hinged fill opening. Made also in 30 gal. size and with other MERIT Pump equipment.

THE MERIT EQUIPMENT CORPORATION
6616 MORGAN AVE. . . . . CLEVELAND, O.

Merit Continuous-Flow Lubricating Outfit No. 154-S-60, for oil or kerosene. 60 gal. double "M" tank and No. 154 rotary pump with non-drip nozzle. Fill opening has locking device.

Watch for announcement of new MERIT Metering Equipment now being further improved following June National Conference of Sealers of Weights and Measures.

MERIT
OIL EQUIPMENT

Merit Equipment Corp.,
6616 Morgan Ave., Cleveland, Ohio N.P.N.
Gentlemen;
Please send me your folder showing Merit Space Saving Units and Metered Oil Equipment

Name .....

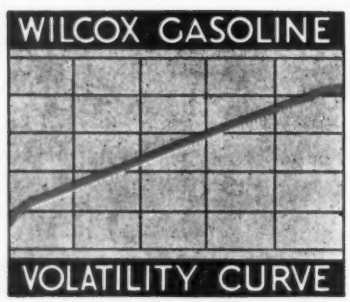
Address .....

Company .....

You Can Tell Your Customers —

WILCOX Gasoline Is A.....

Scientifically Perfected Fuel



Automotive engineers said "straighten the distillation curve" to produce better gasolines. Our refining engineers have succeeded in making the volatility curve of WILCOX Gasoline practically a straight line—with the exception of a slight steepness at the start (to secure low initial and quick starting) and a flatness at the finish (to avoid heavy ends.)

You can go as far as you like in recommending WILCOX Gasoline to your customers. You can tell them how WILCOX specifications, throughout the length of the distillation curve, have been scientifically determined to produce a more efficient and more economical motor fuel. You can explain how unfailing uniformity is secured by the famous WILCOX "double check," which means that no shipment leaves our modern refineries until it has been checked and checked *again* for accurate adherence to our perfected specifications.

You can build business by selling gasoline you can recommend without reservations. Wire or phone for information on WILCOX Gasoline and WILCOX Motor Oils.

WILCOX OIL & GAS COMPANY

PRODUCERS—REFINERS—MARKETERS **General Offices: Tulsa, Okla.**

WILCOX GASOLINE

Refined by the discoverer of the Famous Wilcox Sand

double checked

Airplane Tender Dispenses Hot Oil To Reduce Warming Up Time

CHICAGO

THREE types of tank trucks for airport service are in use over the country. One type is the U. S. Navy truck, pictured herewith, for serving the Los Angeles at Lakehurst, N. J. Another is the complete unit mounted on a truck; 17 of these units are in service for Transcontinental Air Transport. A third type is the semi-trailer unit used at Port Columbus, O.

One of the principles of servicing an airplane, compared with the automobile, is delivering the lubricating oil hot. The Port Columbus unit is designed for hot oil delivery, thus saving time of warming up the plane's engine.

The hot oil and gasoline in the Port Columbus unit are stored in three tanks on the semi-trailer. Two grades of oil are carried, in tanks of 55 gallons capacity each. Gasoline storage capacity is 500 gallons.

Each oil tank is equipped with five General Electric helicoil immersion heaters. There are two heaters in the 50-gallon water tank on the underslung compartment of the truck. Tanks are covered with 2-inch magnesium insulation so the heat is retained from 12 to 14 hours.

While the semi-trailer is in the garage current from any 110-volt circuit may be used to heat the oil through the 2½-kilowatt heaters. Bristol thermostats control the temperature. There are switches in an underslung compartment for each of the 12 heaters.

The oil and gasoline storage tanks are separated by the oil hose reel. At the rear is the gasoline hose reel, and the water separator for the gasoline line.

Each of the three hose reels, two for oil and one for gasoline, is 25 feet long.

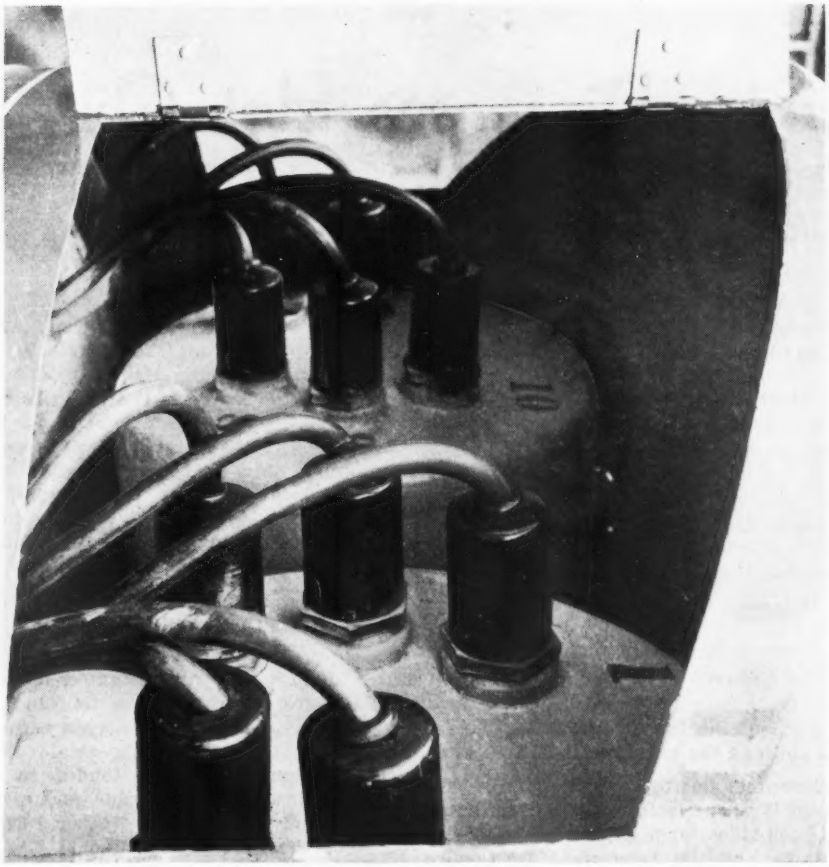
Mounted on top of the tanks are three Bowser Xacto meters, illuminated on both sides for night deliveries. These meters are the type used in service stations, cut down, with special castings for the base. Each tank is equipped with four pop-off valves, and float valves cut off the air pressure when the liquid level becomes too low for dispensing.

The unit is in service for the Standard Oil Co. of Ohio. The Davis Welding & Manufacturing Co. designed and built the tender with the co-operation of Standard of Ohio officials. A. W. Kennerson, superintendent of motor equipment for Standard, handled the automotive equipment and suggested the semi-trailer idea. E. B. Wagoner, chief engineer for Standard, was interested in the dispensing equipment.

The tractor is a General Motors truck, model T-30. Tanks and equipment are mounted on a Fruehauf trailer. Dual wheels are mounted on the tender for greater distribution of weight so as not to damage an airport field in wet weather. The semi-trailer construction allows the tender to be unhooked while the tractor is towing planes, or performing other work around the field.

H. L. Lowery, Cleveland district manager for the Davis company, estimates that a minute on the ground is equivalent to a mile and a half in the air in airplane calculations, so the use of hot oil speeds up servicing a plane and

The airplane tender in service of Standard Oil Co. of Ohio at Port Columbus, Ohio



Close-up of the heating coils on the oil storage tanks of the airplane tender of the Standard Oil Co. of Ohio at Port Columbus, O. Each oil tank has five heating elements

gets it back in the air quicker than with cold oil.

Total weight of the tender and tractor is slightly under 10,000 pounds. The pay load is about 4300 pounds.

The water, air, and tools are carried in underslung compartments beside the oil and gasoline tanks. Along the right hand side, looking forward, is the water tank, of 50 gallons capacity, with two heat units. Ahead of the tank are the thermostats and heater switches.

Along the left hand side is the air tank, of 75 gallons capacity, capable of a reserve pressure of 150 pounds. Reducer valves keep the air pressure on the gasoline tank at seven pounds, and at 20 pounds on the lubricating oil and water. The compressor is operated by a power take-off from the transmission.

Small tools, spark plugs, and strut wire are carried by the tender for the benefit of the pilot.

The gasoline and oil tanks are accessible from a walk above the underslung compartments on both sides. On each walk is a small searchlight on a 20-foot extension cord for emergency use. The tender also carries a storage battery for light power when the tractor is disengaged.

The unit was put in service at Port Columbus, O. last fall. It is painted the Ohio Standard's colors, red, white and blue.

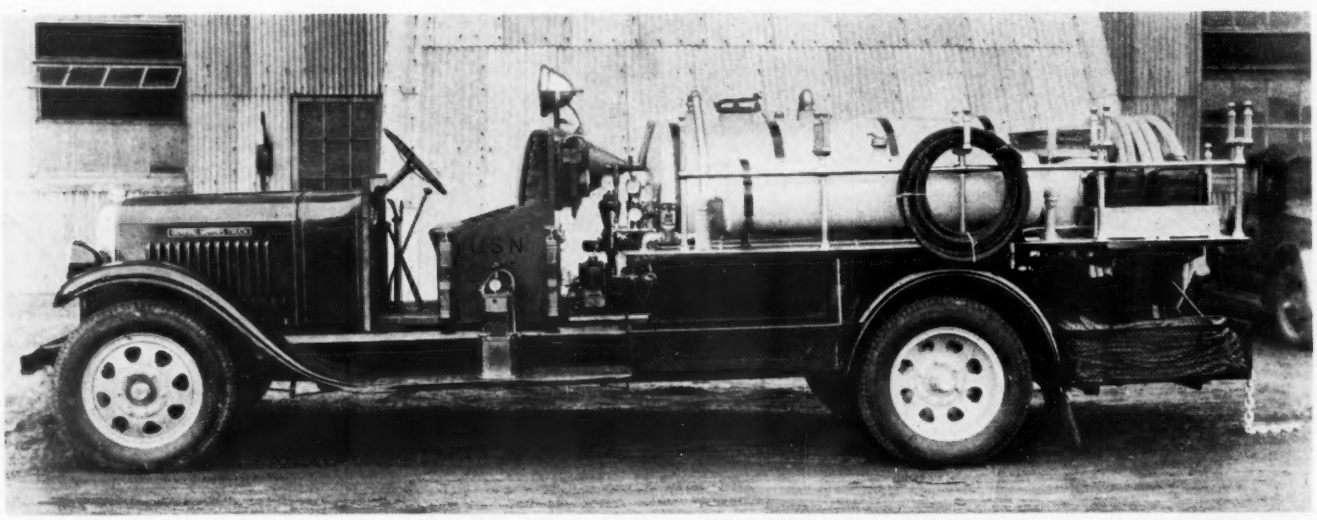
The 17 Transcontinental Air Transport units are mounted on General Motors trucks, model T-42. They were designed and constructed by the Butler Manufacturing Co., Kansas City. Gasoline and oil is pumped from the storage tanks to the plane.

The U. S. Navy airport tender at Lakehurst was designed for the special service of the Los Angeles, which necessitated considerable equipment not required for heavier-than-air machines. But its main function is dispensing oil and gasoline.

Black, Sivalls & Bryson, Inc., Bartlesville, Okla., manufacturer of tanks and steel fabricator of oil field equipment, has created a new division to serve the refiner and natural gasoline manufacturer.

This division will design, manufacture and construct storage tanks, agitators, acid towers, condenser boxes, heat exchangers, aerators, stills, smokestacks, breeching, and other refinery equipment; and for natural gasoline plants fractionating units, bubble towers, scrubbers, non-absorbers, absorption towers, debutanizers, storage tanks, stabilizer towers, and other equipment.

The headquarters of this new division is at Tulsa, at 430 South Rockford. The actual manufacture of this equipment will be done by this company's manufacturing subsidiary, the American Tank & Equipment Corp., Oklahoma City. Seventeen engineers constitute the staff in the refinery and gasoline plant division.



It looks like a fire fighting truck. But it isn't. It is the U. S. Navy's airplane tender for the Los Angeles at Lakehurst, N. J.

Crude Production by Fields

By Telegraph—Daily average gross output, by fields in U. S., for week ending with dates below as compiled by A. P. I.

PRODUCTION SUMMARY

	Sept. 20	Sept. 13
Production east of Rockies	1,808,200	1,806,050
Increase		2,150
Total production in U. S.	2,421,800	2,419,750
Increase		2,050
Crude oil imports	186,570	239,285
Decrease		52,715
Total new crude supply	2,608,370	2,659,035
Decrease		50,665

OKLAHOMA

	Sept. 20	Sept. 13
Allen Dome	15,100	15,700
Asher	1,200	1,300
Asher, West	6,950	7,250
Blackwell	3,000	2,950
Bowlegs	15,700	13,750
Braman	3,250	3,250
Bristow-Slick	15,100	15,150
Burbank	15,500	15,500
Carr City	9,100	6,150
Cromwell	7,400	7,450
Cushing	13,500	13,350
Davenport	1,150	1,200
Duncan Dist.	9,150	9,400
Earlsboro	22,850	22,950
Earlsboro, East	18,400	17,950
Earlsboro, So.	8,950	10,400
Fox	1,150	1,150
Garber	4,600	4,550
Graham	3,250	3,250
Healdton	11,900	11,850
Hewitt	7,000	7,050
Hubbard	1,400	1,450
Konawa	16,150	15,700
Little River	27,300	24,950
Little River, E.	12,900	11,300
Logan County	4,600	4,600
Maud	3,050	3,150
Mission	7,800	7,350
Oklahoma City	98,850	92,650
Okmulgee, North	10,250	10,250
Okmulgee, South	6,950	6,950
Osage (Outside Burbank)	25,300	25,300
Papoose	2,600	2,550
Pearson	700	700
Sasakwa	5,000	5,400
St. Louis	24,350	22,900
Scholem-Alechem	14,000	14,100
Searight	7,300	7,500
Seminole	15,050	14,350
Seminole, East	2,300	2,300
Thomas	650	700
Tonkawa	6,350	6,350
Wewoka	3,750	3,700
Yale-Jenings	7,500	7,750
Others	65,300	65,600
Total, Oklahoma	563,600	549,100
Increase		14,500

KANSAS

	Sept. 20	Sept. 13
Augusta-Fox Bush	2,650	2,650
Churchill	3,600	3,550
El Dorado-Towanda	13,750	13,750
Florence-Covert	750	750
Greenwood Co.	18,500	18,900
Oxford	2,600	2,550
Peabody-Elbing	2,400	2,450
Rainbow Bend	1,100	1,050
Russell	3,100	3,200
Sedgwick Co.	23,950	21,450
Voshell	8,900	12,250
Others	36,000	36,000
Total, Kansas	117,300	118,550
Decrease		1,250

NORTH LOUISIANA

	Sept. 20	Sept. 13
Caddo, light	9,200	9,100
Caddo, heavy	2,700	2,600
Cotton Valley	1,850	1,850
De Soto and Red River	3,000	3,100
Haynesville	4,900	4,950
Holly	1,000	1,000
Homer	3,450	3,450
Sarepta Carterville	2,650	2,650
Urania	5,250	5,300
Zwolle	4,800	4,150
Others	1,700	1,700
Total, North Louisiana	40,500	39,850
Increase		650

ARKANSAS

	Sept. 20	Sept. 13
Champagnolle	3,750	3,750
El Dorado	4,050	4,050
Lisbon	900	900
Nevada	1,050	1,050
Smackover, light	5,050	5,050
Smackover, heavy	36,800	36,700
Stephens	900	900
Others	1,150	1,150
Total, Arkansas	53,650	53,550
Increase		100

ROCKY MOUNTAIN

Wyoming

	Sept. 20	Sept. 13
Big Muddy	2,000	2,000
Elk Basin	750	950
Grass Creek	2,100	2,050
Labarge	2,100	1,350
Lance Creek	150	150
Lost Soldier	5,300	5,250
Oregon Basin	1,200	2,500
Rock River	2,200	2,200
Salt Creek	28,850	31,500
Others	5,200	5,200
Total, Wyoming	49,750	53,150
Decrease		3,400

Montana

	Sept. 20	Sept. 13
Cat Creek	1,100	1,150
Pondera	2,050	2,000
Sunburst	5,850	5,850
Others	50	50
Total, Montana	9,050	9,050

Colorado

	Sept. 20	Sept. 13
Florence	550	400
Fort Collins	1,150	1,150
Moffat (Craig)	1,050	1,150
Others	1,600	1,600
Total, Colorado	4,350	4,300
Increase		50

New Mexico

	Sept. 20	Sept. 13
Artesia	700	700
Hobbs High	40,300	33,800
Balance Lea County	6,900	6,900
Hogback	400	450
Rattlesnake	1,250	1,300
Table Mesa	100	100
Eddy County	300	200
Total, New Mexico	49,950	43,450
Increase		6,500
Total, Rocky Mountain	113,100	109,950
Increase		3,150

TEXAS (OUTSIDE COAST)

Panhandle District

	Sept. 20	Sept. 13
Carson County	7,150	7,500
Gray County	56,900	58,700
Hutchinson County	17,400	17,800
Wheeler County	500	650
Others	400	400
Total, Panhandle Texas	82,350	85,050
Decrease		2,700

North Texas

	Sept. 20	Sept. 13
Archer County	14,050	14,450
Burkburnett	7,850	7,900
Electra	10,450	10,600
Iowa Park and K. M. A.	4,800	5,000
Montague-Cooke	9,500	9,450
Wilbarger	15,300	18,350
Others	1,900	1,700
Total, North Texas	63,850	67,450
Decrease		3,600

West Central Texas

	Sept. 20	Sept. 13
Brown County	5,500	5,700
Callahan County	3,100	3,150
Coleman County	2,750	2,800
Eastland-Desdemona	5,400	5,450
Jack County	2,350	2,950
Palo Pinto County	450	500
Shackleford County	6,800	6,850
Stephens County	5,300	5,300
Throckmorton County	700	700
Young County	15,500	17,150
Others	1,200	1,400
Total, West Central Texas	49,050	51,950
Decrease		2,900

West Texas

	Sept. 20	Sept. 13
Crane and Upton Counties	33,750	35,200
Crockett County	2,150	2,200
Ector County	8,250	7,500
Howard County	22,800	22,250
Jones County	1,350	1,350
Mitchell and Scurry Counties	2,150	2,200
Reagan County	22,300	22,250
Winkler County	63,450	65,600
Yates	101,600	101,700
Balance Pecos County	3,700	3,400
Others	4,700	4,500
Total, West Texas	266,200	268,150
Decrease		1,950

East Central Texas

	Sept. 20	Sept. 13
Boggy Creek	2,550	2,700
Corsicana-Powell	5,500	5,750
Currie	300	450
Mexia	4,100	4,500
Nigger Creek	200	150
Richland	150	200
Van Zandt	28,200	27,000
Wortham	650	750
Total, East Central Texas	41,650	42,000
Decrease		350

Southwest Texas

	Sept. 20	Sept. 13
Chapmann Abbot	10,000	10,950
Dale	300	300
Darst Creek	42,500	42,300
Laredo District	13,550	13,800
Luling	10,000	9,000
Lytton Springs	850	900
Salt Flat	16,500	16,500
Somerset	1,400	1,600
Others	550	500
Total Southwest Texas	95,650	95,850
Decrease		200
Total, Texas (Outside Gulf Coast)	598,750	610,450
Decrease		11,700

GULF COAST
Coastal Texas

	Sept. 20	Sept. 13
Barbers Hill	17,450	17,800
Batson	1,150	1,150
Big Creek	3,350	3,500
Blue Ridge	2,100	2,100
Boling	900	1,000
Damon Mound	700	650
Esperson	2,850	3,050
Fannett	700	700
Goose Creek	4,400	4,500
Hankamar	1,700	1,700
Hull	8,600	9,000
Humble	20,900	21,300
North Dayton	1,300	1,100
Orchard	2,200	2,300
Orange County	2,000	2,300
Pettus	7,650	8,300
Pierce Junction	9,900	11,950
Port Neches	1,450	1,450
Raccoon Bend	12,000	11,850
Refugio County	28,500	29,500
Saratoga	1,150	1,100
Somerville	2,700	1,900
Sour Lake	2,200	2,200
South Liberty	3,400	3,450
Spindletop	15,300	16,000
Sugarland	12,400	12,600
West Columbia	4,150	4,200
Others	2,400	2,550
Total, Coastal Texas	173,500	179,200
Decrease		5,700

Coastal Louisiana

	Sept. 20	Sept. 13
East Hackberry	3,050	2,400
Old Hackberry	1,000	1,050
Edgerly	400	400
Evangeline	2,400	2,000
Lake Barre	1,050	1,100
Lockport	2,650	2,700
Port Barre	3,800	3,100
Sulphur Dome	3,300	3,050
Vinton	5,100	4,400
White Castle	1,100	1,150
Others	2,900	2,900
Total, Coastal Louisiana	26,750	24,250
Increase		2,500
Coast	200,250	203,450
Total, Gulf		
Decrease		3,200

CALIFORNIA

	Sept. 20	Sept. 13
Dominguez	9,900	10,000
Elwood-Goleta	41,400	38,500
Huntington Beach	28,500	28,300
Inglewood	17,500	17,500
Kettleman Hills	24,500	22,500
Long Beach	102,500	103,500
Midway-Sunset	62,500	63,500
Playa del Rey	19,000	19,000
Santa Fe Springs	104,000	105,000
Seal Beach	18,900	18,700
Ventura Avenue	46,900	46,700
Others	138,000	139,500
Total, California	613,600	613,700
Decrease		100

EASTERN

	Sept. 20	Sept. 13
(Not including Michigan)	113,000	113,000

MICHIGAN

	Sept. 20	Sept. 13
Mt. Pleasant	5,450	5,350
Muskegon	2,350	2,500
Saginaw	250	300
Total, Michigan	8,050	8,150
Decrease		100

Compilation Of Mid-Continent Refinery Operations

All Rights Reserved to The National Petroleum Publishing Co.

Mid-Continent Refinery Operations, Week Ended Sept. 19 (By Telegraph)

	Kansas	Oklahoma	North & Cent. Texas	West Texas	North La.-Ark.	Total Week Ended Sept. 19
Plants Reporting	12	29	25	15	12	93
Da. Av. Cap. (Bbls.)	94,500	161,700	106,100	82,000	77,000	521,300
Da. Cracking Capacity	30,700	52,600	17,200	5,000	22,700	128,200
Da. Av. Crude Runs	60,683 — 2.9	98,106 — 3.6	57,632 — 0.8	44,259 + 11.7	42,484 + 4.7	303,164 + 0.2
Da. Av. Other Oils	7,942 + 15.3	4,689 + 86.1	5,248 +151.3	5,302 + 17.3	20,237 + 13.4	43,418 + 28.2
GASOLINE—Gallons						
Stocks, Sept. 12	9,223,000	41,397,000	24,744,000	10,770,000	10,573,000	96,707,000
Prod. 9-12 to 9-19	10,713,000 — 0.6	18,316,000 + 3.7	9,295,000 + 2.7	5,157,000 + 5.1	6,521,000 + 7.3	50,002,000 + 3.2
Ship. 9-12 to 9-19	10,370,000 — 13.8	20,466,000 — 1.0	9,601,000 — 6.8	4,441,000 — 0.1	7,366,000 + 21.5	52,244,000 — 2.4
Stocks, Sept. 19	9,566,000 + 3.7	39,247,000 — 5.2	24,438,000 — 1.2	11,486,000 + 6.6	9,728,000 — 8.0	94,465,000 — 2.3
Ratio Sales to Prod.	96.8%	111.7%	103.3%	86.1%	113.0%	104.5%
KEROSINE—Gallons						
Stocks, Sept. 12	8,134,000	11,233,000	2,411,000	101,000	825,000	22,704,000
Prod. 9-12 to 9-19	1,882,000 + 0.7	2,327,000 + 2.5	1,130,000 + 3.4	.....	619,000 +112.7	5,958,000 + 7.9
Ship. 9-12 to 9-19	2,011,000 + 84.2	2,064,000 — 7.9	763,000 — 43.4	23,000	736,000 +245.5	5,597,000 + 14.4
Stocks, Sept. 19	8,005,000 — 1.6	11,496,000 + 2.3	2,778,000 + 15.2	78,000 — 22.8	708,000 — 14.2	23,065,000 + 1.6
Ratio Sales to Prod.	106.9%	88.7%	67.5%	.....	118.9%	93.6%
STOVE DISTILLATE—Gallons						
Stocks, Sept. 12	5,158,000	4,197,000	664,000	170,000	740,000	10,929,000
Prod. 9-12 to 9-19	297,000 — 31.6	786,000 + 1.9	298,000 + 9.2	153,000 + 26.4	29,000 — 35.6	1,563,000 — 4.9
Ship. 9-12 to 9-19	309,000 — 22.2	686,000 — 13.3	329,000 + 7.5	105,000 — 39.3	29,000 — 35.6	1,458,000 — 14.8
Stocks, Sept. 19	5,146,000 — 0.2	4,297,000 + 2.4	633,000 — 4.7	218,000 + 28.2	740,000	11,034,000 + 1.0
Ratio Sales to Prod.	104.0%	87.3%	110.4%	68.6%	100.0%	93.3%
GAS OIL—Gallons						
Stocks, Sept. 12	5,324,000	45,861,000	2,528,000	4,893,000	6,488,000	65,094,000
Prod. 9-12 to 9-19	940,000 + 4.6	1,022,000 — 10.7	739,000 + 93.9	786,000 — 31.2	2,177,000 — 10.1	5,664,000 — 5.4
Ship. 9-12 to 9-19	1,468,000 — 15.2	1,618,000 — 19.3	595,000 — 14.3	552,000 — 21.7	2,302,000 + 21.3	6,535,000 — 7.1
Stocks, Sept. 19	4,796,000 — 10.0	45,265,000 — 1.3	2,672,000 + 5.7	5,127,000 + 4.8	6,363,000 — 1.9	64,223,000 — 1.3
Ratio Sales to Prod.	156.2%	158.3%	80.5%	70.2%	105.7%	115.4%
FUEL OIL—Gallons						
Stocks, Sept. 12	31,006,000	51,209,000	71,281,000	21,526,000	16,781,000	191,803,000
Prod. 9-12 to 9-19	4,561,000 — 0.1	6,310,000 + 5.7	6,772,000 + 6.9	6,079,000 + 20.1	4,369,000 + 1.9	28,091,000 + 7.1
Ship. 9-12 to 9-19	4,225,000 — 15.4	8,364,000 + 34.1	7,395,000 + 12.5	5,991,000 + 14.7	4,409,000 — 0.4	30,384,000 +10.7
Stocks, Sept. 19	31,342,000 + 1.1	49,155,000 — 4.0	70,658,000 — 0.9	21,614,000 + 0.4	16,741,000 — 0.2	189,510,000 — 1.2
Ratio Sales to Prod.	92.6%	132.6%	109.1%	98.6%	100.9%	108.2%

Gasoline Produced by Various Methods, Week Ended September 19

	Kansas	% of Total	Oklahoma	% of Total	North & Cent. Texas	% of Total	West Texas	% of Total	Louisiana-Arkansas	% of Total	Total	% of Total
Straight Run	6,595,000	61.6	11,228,000	61.3	5,790,000	62.3	4,735,000	91.8	1,652,000	25.3	30,000,000	60.0
Cracked	3,688,000	34.4	5,542,000	30.3	2,261,000	24.3	244,000	4.7	3,704,000	56.8	15,439,000	30.9
Natural	430,000	4.0	1,546,000	8.4	1,244,000	13.4	178,000	3.5	1,165,000	17.9	4,563,000	9.1
Total	10,713,000		18,316,000		9,295,000		5,157,000		6,521,000		50,002,000	

\+ or — columns are % changed over previous week.

Gasoline Stocks Fall at Mid-Continent Plants

TULSA, Sept. 23

MID-CONTINENT refiners that report their operating statistics weekly to NATIONAL PETROLEUM NEWS, drew 2,200,000 gallons of gasoline from storage in the week ended Sept. 19 to meet demand. The draft came although output was more and shipments were less than in the preceding week. Gasoline inventories were 2,000,000 gallons more Sept. 19 than in the week before.

Runs of crude oil to stills were steady for the district as a whole. West Texas and Louisiana-Arkansas increased were offset by reduction in other districts. Charges of other oils were increased 9600 barrels daily average, thereby increasing gasoline output 1,500,000 gallons for the week.

Gasoline shipments were 1,300,000 gallons less than in the preceding week but 2,000,000 gallons larger than in the corresponding week a year ago.

Kerosine production and shipments both increased. Stocks rose 300,000

Summary for the Month

Production and shipments, all reporting refineries, for four weeks ended Sept. 19. Change in stocks figures from Aug. 22.

GASOLINE

	Gallons
Production	189,419,000
Shipments	214,053,000
Net change in stocks	—24,634,000
Ratio sales to production	113.0%

KEROSINE

	Gallons
Production	21,838,000
Shipments	22,197,000
Net change in stocks	—359,000
Ratio sales to production	101.6%

STOVE DISTILLATE

	Gallons
Production	6,666,000
Shipments	6,078,000
Net change in stocks	+588,000
Ratio sales to production	91.2%

GAS OIL

	Gallons
Production	25,641,000
Shipments	27,842,000
Net change in stocks	—2,201,000
Ratio sales to production	108.6%

FUEL OIL

	Gallons
Production	106,709,000
Shipments	109,484,000
Net change in stocks	—2,775,000
Ratio sales to production	102.6%

gallons because of increases in Oklahoma and North Texas.

Distillate production and shipments were down. Stocks rose slightly. Gas oil stocks increased 2,200,000 gallons. Fuel oil stocks were lowered 2,300,000 gallons.

N. P. N. Service Record

Some of the requests for information, data and advice, which were taken care of in various National Petroleum News offices in the past week are:

Ohio aerial survey company furnished names of operating executives of pipeline companies and pipeline department of large oil companies.

* * *

Akron tire company furnished names, addresses and subsidiaries of 27 major oil companies.

* * *

Canadian statistical organization referred to N. P. N. Oil Price Handbook for statistics on production of crude and refined products and for directory of oil refineries in this country; also to other source.

* * *

Missouri oil company inquiring for oil handbook for speakers referred to the American Petroleum Institute.

* * *

Pennsylvania manufacturer of drinking cups given names, addresses and plant locations of 35 oil companies making paraffin wax.

* * *

New Jersey inquirer furnished references to N. P. N. and other publication articles on the manufacture of steam reduced and oxidized asphalt.

* * *

Also Mexican subsidiary of large American oil company given data on Mexican oil report; Texas electric company furnished refinery prices in North Texas district; and general oil conditions discussed with motor transportation executive.

* * *

Missouri refiner-marketer furnished references to 23 N.P.N. articles on evaporation losses at refineries and bulk plants.

* * *

Louisiana refiner furnished names and addresses of 23 oil exporters.

* * *

Missouri advertising agent furnished references to N.P.N. articles on service station management and merchandising.

* * *

New York distributor of mineral and medicinal oils referred to possible source for additional market.

* * *

New York inquirer given statistics on gasoline pump installations in the United States.

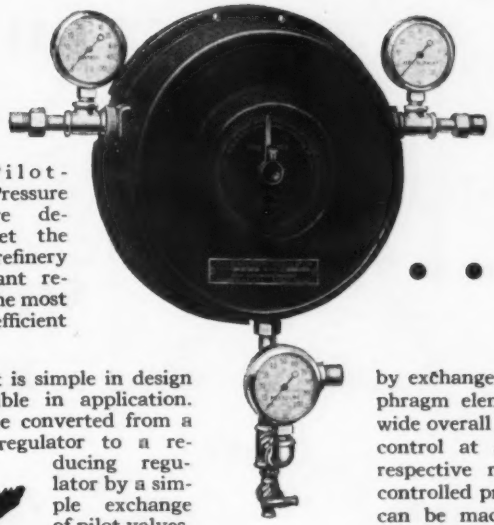
* * *

Kentucky equipment manufacturer given locations of pumping stations of two pipeline companies and referred to sources for maps of refineries and natural gasoline plants.

* * *

Missouri distributor referred to two N.P.N. articles on blending natural gasoline to volatility specifications and the effect of adding various percentages of natural gasoline to naphtha.

Tycos
Pressure Regulators



TYCOS Pilot-operated Pressure Regulators are designed to meet the most exacting refinery or gasoline plant requirements in the most practical and efficient way.

The instrument is simple in design and very flexible in application. It can easily be converted from a back-pressure regulator to a reducing regulator by a simple exchange of pilot valves. Likewise where the pressure rating of the control valve is suitable for the different requirements, it can be converted from a low pressure to a high pressure controller by exchange of diaphragms. Diaphragm elements are furnished in wide overall control ranges allowing control at any point within the respective ranges. A change in controlled pressure of a new setting can be made by easy movement of the adjusting cam through a key insertion.

As it is separate and apart from the diaphragm or control valve, the *Tycos* Pilot-Operated Pressure Regulator can be used as a remote controller, allowing panel board location of instruments or centralized control. Hundreds of installations prove the popularity of this instrument.

Bring your control problems to Booths 35 *and* 36 *at the Tulsa Show. Tycos men will be glad to discuss them with you.*

Tycos
Temperature Instruments
INDICATING-RECORDING-CONTROLLING

Taylor
Instrument Companies
ROCHESTER, N. Y., U. S. A.

CANADIAN PLANT
TYCOS BUILDING
TORONTO

MANUFACTURING DISTRIBUTORS IN GREAT BRITAIN
SHORT & MASON, LTD., LONDON, E-17

BETHLEHEM
WAX PLANT EQUIPMENT

Filter Presses
Wax Distillate Chilling Machines
Wax Testing Presses
Wax Moulding Presses
Scale Wax Cooling Drums
Paraffine Wax Sweater Plants
Complete Wax Plants designed and built
Pumps, Stills, Towers, Condensers, and other Oil Refinery Equipment
Oil Burning Systems

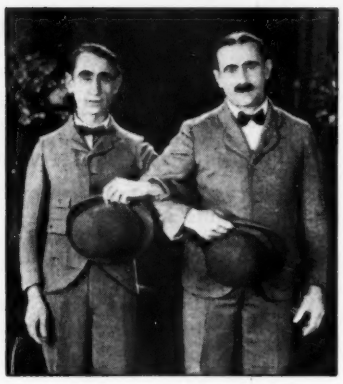
BETHLEHEM STEEL COMPANY, *General Offices: Bethlehem, Pa.*

District Offices: New York, Boston, Philadelphia, Baltimore, Washington, Atlanta, Pittsburgh, Buffalo, Cleveland, Cincinnati, Detroit, Chicago, St. Louis

Pacific Coast Distributor: Pacific Coast Steel Corporation, San Francisco, Los Angeles, Portland, Seattle, Honolulu

SINCLAIR IS ON THE AIR!

PHIL BAKER
as H-C



SHAW & LEE
as Mobie & Opie

Tune in on "GOING PLACES" with H-C, Mobie and Opie

Never before have such well-known musical comedy and vaudeville stars been associated in a radio program like "GOING PLACES". Phil Baker, Shaw and Lee are all old timers in the business of getting laughs! The list of Broadway hits they have appeared in includes:—"Artists and Models", "Pleasure Bound", "Gay Paree", "Great Boy", "A Night in Spain", "The Greenwich Village Follies", "The 5 O'clock Girl", "Ed Wynn's Grab Bag", "Ziegfeld's Midnight Frolic" and many seasons in vaudeville.

These laugh-makers are bringing business to the Sinclair dealers. Ask the Sinclair salesman.

Monday and Friday Evenings at 7:45 New York time on these stations.

AKRON . . . . . WADC	CINCINNATI . . . . WKRC	NEW YORK CITY . . WABC
ATLANTA . . . . . WGST	CLEVELAND . . . . . WHK	SIOUX CITY . . . . . KSCJ
BALTIMORE . . . . . WCAO	DETROIT . . . . . WXYZ	PHILADELPHIA . . . . WCAU
BUFFALO . . . . . WKBW	DALLAS . . . . . KRLD	ST. LOUIS . . . . . KMOX
CHICAGO . . . . . WMAQ	FORT WAYNE . . . WOWO	TOLEDO . . . . . WSPD
	KANSAS CITY . . . . KMBC	

SINCLAIR REFINING COMPANY (*Inc.*)

SINCLAIR REFINING COMPANY (Inc.)

New York · *Atlanta* · *Chicago* · *Houston* · *Kansas City*

SINCLAIR REFINING COMPANY OF CANADA, Ltd., *Toronto*

SINCLAIR REFINING COMPANY OF CALIFORNIA, *Los Angeles*

Refinery - Tank Wagon Markets

Conflicting Price Trends Stand Out In Export and Domestic Markets

CLEVELAND, Sept. 23

CONFLICTING price trends were noted in oil markets throughout the country last week. Export and domestic markets on the Pacific Coast improved materially. Export prices for light oils at the Gulf were reported down 1 to 1.50 cents a gallon. Tank car prices for most commodities advanced in middle western refinery districts, while prices were down in Pennsylvania and on the Atlantic seaboard.

Persistent reports among the New York oil trade to the effect that the Export Petroleum Association had reduced its posted prices for light oils in bulk at the Gulf probably were the week's most significant feature. Although official confirmation of lower prices was lacking, activities of member companies during the week seemed to substantiate the reports. Cargo prices for kerosine were said to have been reduced 1 cent a gallon and for gasoline, 1.50 cents a gallon. Firm offers were said to have been made to New York brokers by association members at the lower prices.

There was a slight let-up in local retail price reductions but only in this way could retail markets be said to have shown any improvement. A reduction of 2 cents a gallon in gasoline and kerosine prices by Standard Oil Co. of Ohio on Sept. 18 was the first of the fall season's general territory price revisions.

The advance in tank car prices for refined gasoline in the Mid-Continent was halted but other oils, particularly the better grades of burner oil and natural gasoline, pushed forward. Natural gasoline was very active in all districts of the Mid-Continent. Estimates were that over 600 cars of material were traded during the week with prices advancing 0.5 cent.

Gasoline likewise slowed up in the Chicago market. The U. S. Motor price there was down 0.125 cent on the low end of the market. Furnace oils followed the Mid-Continent trend, however, with prices showing nice gains.

Pennsylvania and Atlantic seaboard markets lost ground. U. S. Motor hit new lows for the movement at 6.50 cents and 7.75 cents, respectively, in the two markets. Pennsylvania bright stocks were quoted 1 to 2 cents a gallon lower and prices of other commodities receded in lesser amounts.

U. S. Motor Drops 0.125 Cent in Chicago

Staff Special

CHICAGO, Sept. 20

SPOT tank car gasoline prices, which had been moving upward since the first of September, lost some of their gain in the Chicago Resale market in the week ended Sept. 20 as the low of the price range on U. S. Motor moved down 0.125 cent.

A change from a bullish to a bearish tone was noticeable early in the week, but did not have any appreciable effect on the general run of prices until the last two days. Practically all sales of U. S. Motor gasoline reported the first of the week were on a basis of 6.25 to 6.50 cents, but by Sept. 20, many of the carlot marketers had reduced their quotations to 6.125 cents and one or two reported sales at 6 cents.

A considerable difference of opinion as to resale buying prices on U. S. Motor was reported Sept. 19 and 20 by carlot marketers. Two or three said their Tulsa offices had been offered full specification U. S. Motor by a few Oklahoma and North Texas refiners at 5.75 and 5.875 cents. On the other hand, several marketers said they had thoroughly canvassed the refiners in these districts and had been unable to buy any good U. S. Motor at under 6 cents. A number of marketers, who were paying 6 cents, were reselling at 6.125 cents, while there was a little "long" gasoline being offered at 6 and 6.125 cents. Sales of Motor also were reported by marketers at 6.25 and 6.375 cents. Refiners reported sales at 6.25 to 6.50 cents, with most of their quotations at 6.50 cents.

Most of the blame for the slight drop in spot prices was attributed by the trade to a lack of gasoline buying by jobbers. Evidently they were in the market only for the actual amounts of gasoline needed to keep their stations in operation, and although consumption still was good for the season, this buying was not enough to make an active spot market.

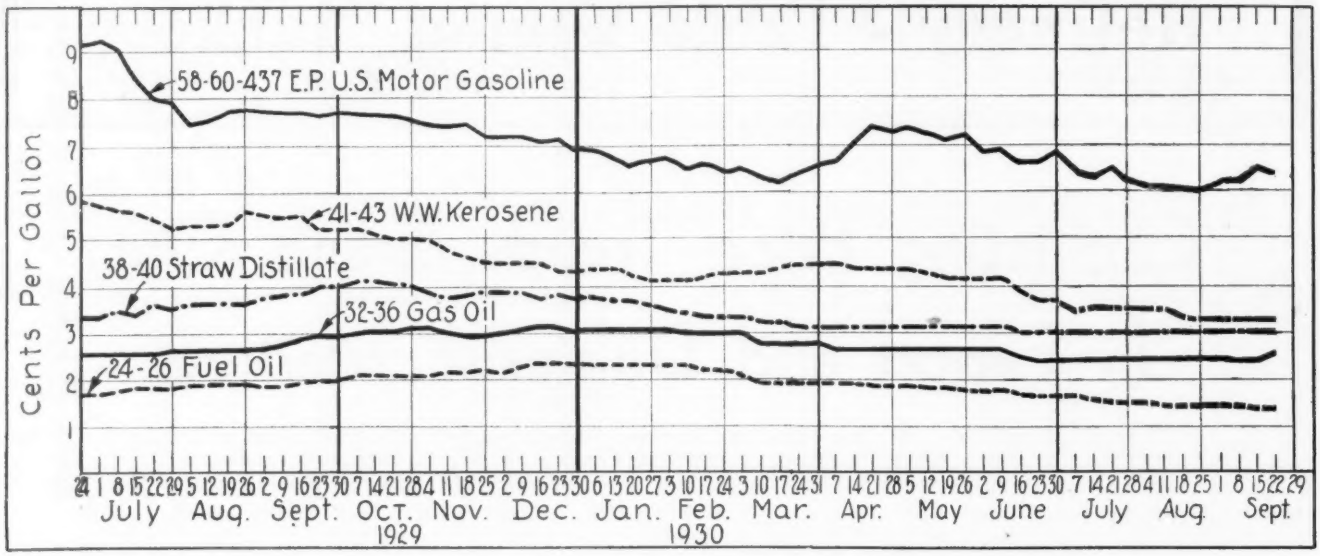
Another reason given by the trade for the lack of jobber interest in the market was the uneasiness over the retail price structure. Tank wagon and service station prices were cut over most of Michigan by one company doing business there, and service station prices were cut at a large number of Michigan cities by the major distributing companies. These reductions, coupled with those made lately at other points over the Standard of Indiana territory, have caused many buyers to believe there would be a general reduction in the near future. However, no definite information along this line could be obtained from the major companies.

High gravity gasolines and kerosines were without any changes of material interest during the week. Prices remained at the same levels as at the end of the previous week, and demand relatively was quiet.

Possibly the most active products and the only ones showing a tendency toward higher prices at the present time, were low cold test gas and fuel oils. One of the largest suppliers of fuel oil in the Chicago district reported it was sold up and was turning down orders.

Most sellers advanced prices of zero fuel oils 2.50 cents a barrel and several raised their quotations 5 cents. Straw zero gas oil was reported scarce and in steady demand at prices 0.125 to 0.26 cent higher. Industrial oils were fair-

Current Prices of Principal Mid-Continent Refined Products


58-60-437 E.P. U.S. Motor Gasoline
41-43 W.W. Kerosene
38-40 Straw Distillate
32-36 Gas Oil
24-26 Fuel Oil
Cents Per Gallon
July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept.
1929
1930

Prices shown are in Group 3 basis and extended to date shown in Refinery Market Tables Section of this issue

ly active but showed little change in price.

Several shower periods are likely over the northern portions of the Standard of Indiana territory next week, while generally fair in the southern portions. Temperatures will be near normal most of the week.

Late Market Changes

LOUISVILLE—On Sept. 22 Standard Oil Co. of Kentucky advanced tank wagon and service station prices of gasoline 2 cents at Birmingham, to 18 cents and 20 cents respectively, including 4 cent tax.

Gulf Lubes Moving Fairly Well

HOUSTON, Sept. 22.—Fair movement of the various grades of pale and red oils took place the past week in Gulf Coastal lubricant markets. Manufacturers report no substantial change in the situation as compared with recent weeks. Domestic jobbers are making some inquiries against winter requirements of zero cold test goods.

Kentucky Marketers Meet Oct. 14

LOUISVILLE—On Oct. 14 the Kentucky Petroleum Marketers Association will meet at the Seelbach Hotel, Louisville, according to Herbert L. Clay, secretary.

Western Natural May Lay Gas Line to Omaha

TULSA, Sept. 20.—Dormant for several months, the Omaha natural gas situation has come to life. Contract has been signed between the board of managers of the metropolitan gas company—municipally owned artificial gas company—and the western Natural Gas Co., which proposes to deliver gas at the city gate for distribution by the municipal company.

Western Natural is a subsidiary of Tri-Utilities Corp., financially sponsored by the G. L. Ohrstrom house, New York, and is a brother company to the Oklahoma Natural Gas Corp and the Southern Natural Gas Corp., which supplies Birmingham, Atlanta and other southern cities with gas from the Monroe field of Louisiana. Executive officers would be the same as those of Oklahoma Natural.

The contract for Omaha is subject to approval by the public and it is expected, after certain burner-tip rate schedules are worked out, that an election will be called for Nov. 18.

If approval is given, Western Natural will lay a 20-inch line from Moore county, Texas Panhandle, to Omaha, capable of delivering 100 million cubic feet per day.

Shipments From Southern California

LOS ANGELES, Sept. 18.—Bulk petroleum shipments from Southern California ports to Foreign and Atlantic Seaboard ports for week ended Sept. 13 totaled 1,234,789 barrels as compared with 1,458,212 barrels the previous week. Destination and quantity of shipments were as follows:

Destination	Crude	Gasoline	Diesel	Kerosine	Fuel	Gas-Oil	Total
Pacific For.	123,196	98,459	49,438	.....	366,854	.....	637,947
Atlantic Dom.	.....	153,341	.....	.....	.....	141,542	294,883
Atlantic For.	.....	251,020	.....	.....	50,939	.....	301,959

Prices 10 Years Ago
Sept. 20, 1920

	Oklahoma	Penna.
58-60 U. S. Motor.....	23.25-23.50c	26 50-26.75c
80-84 Natural	21.00-22.00c	.....
Kerosine (42-43 Okla.; 47 w. w. Pa.).....	9.75-10.25c	14.75c
Fuel Oil (24-26 Okla.; 36-40 Pa.)	$2.70-$2.80	12.00c
Crude (Okla. 35-35.9)	$3.50	$6.10
Chicago tank wagon (no state tax)		27.00c

Prices A Year Ago
Sept. 23, 1929

	Oklahoma	Penna.
58-60 U. S. Motor.....	7.6747c	8.625-9.25c
Grade A Natural	6.75-7.00c	.....
Kerosine (Okla. 41-43; Pa. 47 w. w.)....	5.00-5.50c	7.00-7.50c
Fuel Oil (Okla. 24-26; Pa. 36-40).....	$0.80-$0.85	4.375-4.75c
Crude (Okla. 35-35.9)	$1.40	$3.30
Chicago tank wagon (including 3c tax).....		19.00c

Mid-Continent Refinery Markets

Refined Gasolines Quiet; Naturals Active

Staff Special
TULSA, Sept. 20

A QUIETER tone developed in the Mid-Continent gasoline market during the week of Sept. 15 to 20, as spot orders became somewhat smaller in volume, and combined shipments on both the spot and contract orders were below the total for the previous week.

Prices generally speaking were steady in all districts of the Mid-Continent. The Oklahoma and Kansas refiners obtained 6.25 to 6.50 cents a gallon for 58-60 U. S. Motor grade, the latter obtaining those prices on a Group 3 freight basis, and from 6.50 to 6.75 cents in their differential territory.

North Texas refiners reported business slower but the low of their price range advanced 0.125 cent. West Texas refiners as well as the Arkansas and north Louisiana refiners made no changes in their quotations. The latter named refiners reported demand improved late in the week.

Higher gravity gasolines were in slightly better demand in the districts in which they are made. Prices responded to this improvement in seasonal demand, with advances on some grades amounting to 0.25 cent a gallon.

Natural gasolines were one of the features for the week. Prices moved up fractionally in all districts. Buying was exceptionally heavy, and material toward the end of the week was extremely scarce several sellers indicated.

More than 600 cars of various grades were reported sold during the week. Several of these sales were for quantities ranging from 25 to 125 cars. One interesting fact was the entrance of the Texas Corp. in the market late in the week with a reported purchase of 125 cars of grade AA at 6 cents a gallon. This company as far as could be learned had not been a factor in the market for several months.

A check of the manufacturers late in the week indicated that stocks were at a minimum at all plants in the Mid-Continent with the possible exception of two major manufacturers who must carry a sizeable volume as working stocks. The prevailing quotation on grades A and AA Sept. 20 was 6 cents, with indications that price also would be applicable to the lower grades within a few days.

One large manufacturer has been hampered because of proration which cut down his natural gasoline production. As a result he has had to buy on the open market to supply his customers, and reports this week were that he already has bought well over a thousand cars.

Kerosines have failed to develop the activity many refiners had expected. Demand remained comparatively light in most quarters and no changes were noted in prices. The only favorable reports were received from the Louisiana district where demand was reported to have increased sufficiently to cause a slightly higher price in differential territory.

Distillates were in better demand in all districts. Contract shipments showed a good increase and more spot buying was reported. This situation has failed, however, to react on prices, probably due largely to the fact that kerosines had failed to move upward.

Low cold test gas oils were in active demand and scarce in several quarters. Buying was in progress for fall and winter demand from home burner users. Ordinary grades of gas oil were not as freely offered as they had been earlier in the month.

High gravity fuel oils were scarce in all districts but prices remained unchanged. The low cold test, high gravity oil was exceptionally scarce for prompt shipment, several buyers reported. The increase in demand was believed to be merely seasonal.

Lower grade and higher cold test fuel oils were comparatively quiet and were freely offered in several quarters, but no changes were made in prices.

Neutral oils were quiet in most quarters at steady price levels. Cylinder stocks were lower as a result of keen competition on the part of one or two refiners in the Mid-Continent. Quotations for export shipment were reported from 20.50 cents up on the 150-160 vis. 210 bright stock of high cold test, but quotations to the domestic jobbing trade ranged from 22 to 24 cents, while the low cold test oils were quoted at 23 to 25 cents a gallon.

Wax price moved to 2.25 cents a pound as demand continued to show some improvement at a time when one or two manufacturers were entirely out of the market for either prompt or deferred shipment.

Two New A.P.I. Booklets Published

NEW YORK, Sept. 20.—Two new booklets of the oil industry series for general information to the consuming public have been issued by the American Petroleum Institute. No. 10 is "Petroleum from Well to Market," and No. 9 is "Gasoline, 30 Questions Answered."

The gasoline booklet answers 30 of the most common questions asked by the layman about gasoline, volatility, energy, detonation, anti-knock fuels, mileage, waste, production, transportation, taxes, price variations and safeguards.

The general booklet telling how petroleum moves from well to market is one which will give the uninitiated a clear idea of our industry. Booklets may be purchased at small cost from the Institute for distribution to customers at the service station.

Sinclair Launches New Advertising Campaign

CLEVELAND, Sept. 22.—Sinclair Refining Co. is undertaking the largest advertising campaign in the history of the company beginning within the next few days. Radio will be used in addition to other standard forms of publicity.

A feature of the program will be the promotion of Mobiline sales. Mobiline is the Pennsylvania motor oil manufactured by the company at its plant at Wellsville, N. Y. The plant has been in operation since 1905 but recently has been enlarged and improved to provide an adequate supply of pure Pennsylvania oil.

A new slogan adopted by the company stresses the great age of the oil used in manufacturing lubricants. The slogan is: "Mellowed a hundred million years." In the newspaper and magazine advertising the company will show pictures of reconstructed animals of prehistoric times one of the first being a Dinosaur.

Sinclair broadcasts beginning Sept. 22 will be over the Columbia chain Mondays and Fridays at 7:45 p.m. New York time.

What Exhibitors Will Show at Tulsa

Received too late to classify

C. J. Tagliabue Mfg. Co., 32, 33 S. & T. Bldg., complete line of laboratory and plant instruments for oil refineries. A feature will be the new Tag Saybolt Thermostatic Viscosimeter and the Tag Nu-Typ hydrometer. R. M. Wilhelm, division sales manager, C. L. Huffman and A. G. Koenig will attend.

* * *

Westcott Valve Co., new drilling gate valve built without gaskets but leakproof because of ground and tapered joints. A special feature is tangential openings for cleaning the interior with steam.

* * *

Neilan Co., Ltd., first showing of ball bearing rotary stem, diaphragm-motor valve for high pressure and temperature application at refineries for use with instrument type temperature controllers, flow controllers and liquid level controllers.

Comparative Prices of 58-60 U. S. Motor Gasoline, 437 E. P., Group 3 and Point of Origin, to Jobbers Only

In Effect September 22

	Price F.O.B. Group 3		*Price F.O.B. Point of Origin*		*If for Particular Destination*
Oklahoma	6.4687	(Wt. Avg.)	6.4687	(Wt. Avg.)	.....
Kansas	6.375–6.50	.....	.....	.....	S. O. Neb. & Indiana Territory, etc.
Kansas	.....	.....	6.7361	(Wt. Avg.)	Kansas only.
North Texas	6.25	.....	6.125–6.25	.....	.....
West Texas	6.50	.....	6.25 –6.50	.....	.....
Louisiana-Arkansas	6.375	.....	.....	.....	Michigan, Ohio and Indiana.
Louisiana-Arkansas	.....	.....	6.50	.....	State or differential haul.
Indiana-Illinois	6.25–6.50	.....	..... *	.....	S. O. Indiana territory except Detroit and vicinity. For Ohio on delivered basis only.

*Shipments made from E. Chicago, Ind., and Wood River, Ill., according to conditions and freight rates; no prices F.O.B. point of origin can be given.

Chicago Resale Market

CHICAGO, Sept. 20

THE low of the price range on U. S. Motor gasoline moved down 0.125 cent last week. Spot demand was light and retail gasoline markets were unsettled. Sales of U. S. Motor were reported Sept. 20 at 6.125 to 6.50 cents, as against a low of 6.25 cents the beginning of the week. Reductions in retail gasoline prices over most of Michigan and at many other points in the Standard of Indiana territory have caused many of the trade to expect a general reduction in the near future. Low cold test gas and fuel oils moved at higher prices in most quarters.

Following prices represent majority of sales made on Group 3 freight basis, although shipments may originate in other refining districts such as North and West Texas, Arkansas, Louisiana, Indiana, Illinois, Kentucky, etc.

	Prices Sept. 22	Prices Sept. 15	Prices Sept. 8
58-60 U. S. Motor, 437 e.p.	6.125– 6.50	6.25 – 6.50	6.00 – 6.25
†56-62 400-437 e.p. anti-knock gasoline	6.50 – 7.375	6.50 – 7.375	6.375– 7.125
60-62 437 e.p. gasoline	6.25 – 6.50	6.375– 6.50	6.25 – 6.375
60-62 400 e.p. gasoline	6.50 – 6.625	6.50 – 6.625	6.125– 6.50
64-66 375 e.p. gasoline	6.75 – 7.00	6.75 – 7.00	6.625– 7.00
68-70 350-360 e.p. gasoline	7.00 – 7.25	7.00 – 7.25	6.75 – 7.25
*Domestic Aviation Gasoline	8.25 – 8.75	8.00 – 8.50	8.00 – 8.50
41-43 w.w. kerosene	3.125– 3.375	3.125– 3.375	3.125– 3.375
42-44 w.w. kerosene	3.50 – 3.75	3.50 – 3.75	3.50 – 3.75
38-40 straw distillate	2.875– 3.00	2.875– 3.00	2.75 – 3.00
32-36 ordinary dark gas oil	2.125– 2.375	2.125– 2.375	2.125– 2.375
32-36 dark zero gas oil	2.25 – 2.50	2.25 – 2.50	2.25 – 2.50
32-36 straw zero gas oil	2.75 – 2.875	2.625– 2.75	2.625– 2.75
28-30 zero fuel oil (per bbl.)	$0.80 –$0.825	$0.775–$0.825	$0.775–$0.825
28-30 fuel oil (per bbl.)	$0.775–$0.825	$0.775–$0.825	$0.775–$0.825
24-26 fuel oil (per bbl.)	$0.60 –$0.65	$0.60 –$0.65	$0.60 –$0.65
18-22 fuel oil, low sulfur (per bbl.)	$0.475–$0.525	$0.475–$0.525	$0.475–$0.525
18-22 fuel oil, high sulfur zero (per bbl.)	$0.50 –$0.525	$0.475–$0.525	$0.475–$0.525
14-16 fuel oil (per bbl.)	$0.425–$0.475	$0.425–$0.475	$0.425–$0.475

*Prices are based on U. S. Gov't. specifications or better. Present Gov't. specifications require distillation range of 5% recovery at not more than 167° F., and not less than 122° F.; 50% recovery at 221°; 90% at 311°; 96% at 347°; end point 374° F. Gasoline of fighting grade specifications in some instances sells at a premium over domestic aviation grade. Prices represent majority of quotations.

†Over 45% benzol equivalent. Prices represent quotations and sales.

Weighted Average Prices

OKLAHOMA

	Sept. 22		Sept. 15		Sept. 8	
	No. of Cars	Price	No. of Cars	Price	No. of Cars	Price
58-60 U. S. Motor, 437 e.p.	4	6.4687	14	6.4107	11	6.2273
60-62 437 e.p. gasoline	..	6.50–6.75 (See note)	..	6.50–6.65 (See note)	8	6.2031
60-62 400 e.p. gasoline	..	6.75–7.00 (See note)	..	6.75 (See note)	1	6.7500
64-66 375 e.p. gasoline	..	7.00–7.25 (See note)	..	6.75–7.00 (See note)	1	7.0000
58-60 437 e.p. gasoline (Full U. S. Motor specifications not guaranteed.)	..	6.125–6.375	..	6.125–6.375 (See note)	..	6.00–6.25

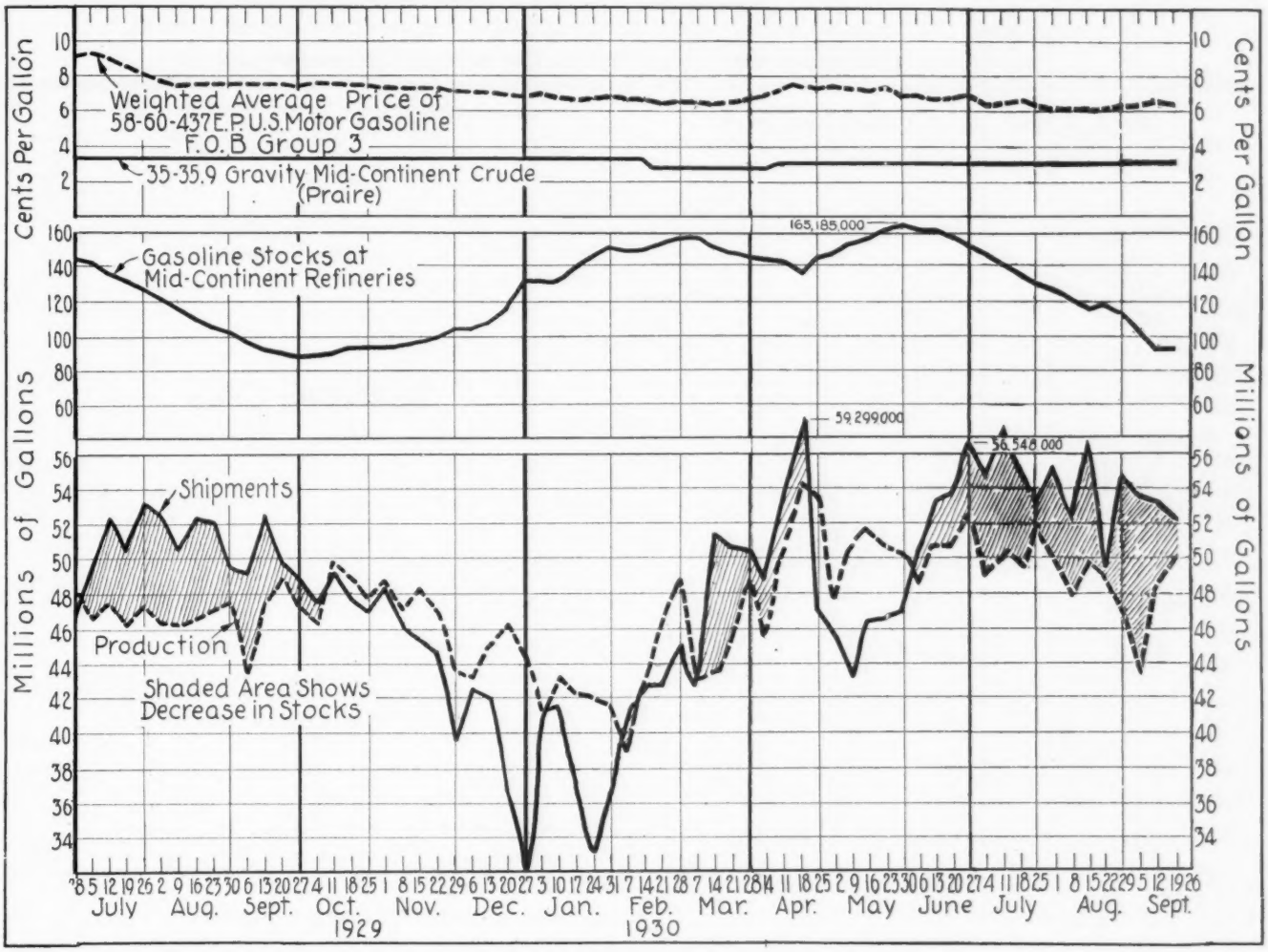
KANSAS

	Sept. 22		Sept. 15		Sept. 8	
	No. of cars	Price	No. of cars	Price	No. of Cars	Price
58-60 U. S. Motor, 437 e.p.	9	6.7361	7	6.7857	8	6.5313

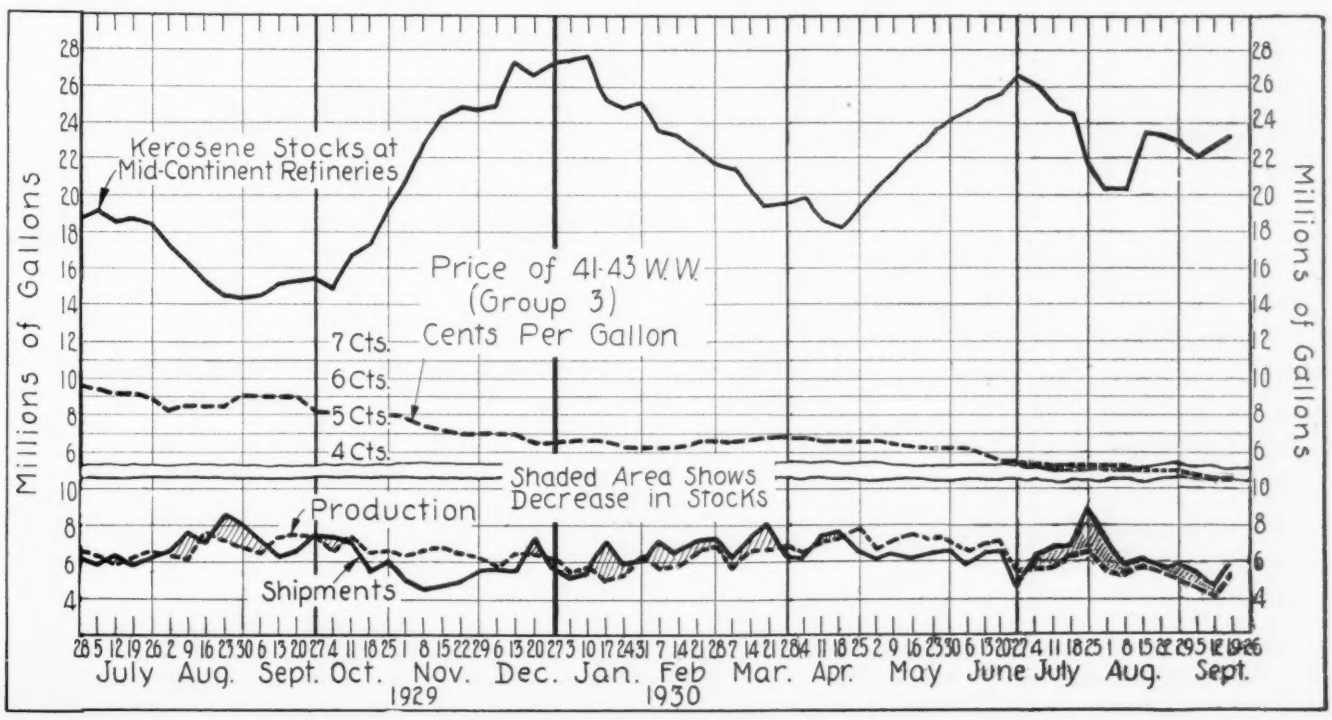
Note: No sales reported for the gasoline marked "see note" on the dates so marked; prices shown on such dates represent majority of quotations only.

Barometer of Mid-Continent Refinery Market—Week Ending September 19

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 93 Plants to National Petroleum News



Prices shown above are extended to date shown in Refinery Market and Crude tables in Market section of this issue and stocks, shipments and Production are extended to date as shown in the table on page 210



Refinery Markets on Light Oils and Lubricants

Prices given below are in cents per gallon, except where $ is shown. They represent prices made only to domestic jobbers who resell to the consuming public, except where otherwise noted.

(These Refinery Prices compiled in the OIL PRICE HANDBOOK for a whole year)

GASOLINE AND NAPHTHA

OKLAHOMA (F. o. b. Oklahoma refineries)

	Prices Sept. 22	Prices Sept. 15	Prices Sept. 8
48-50 450 e.p. naphtha	6.00	6.00	5.75 – 6.00
50-52 450 e.p. naphtha	6.00	6.00	5.75 – 6.00
56-58 450 e.p. gasoline	6.00 – 6.25	6.00 – 6.25	6.00
58-60 450 e.p. gasoline	6.00 – 6.25	6.00 – 6.25	6.00
64-66 390 e.p. gasoline	6.625– 6.75	6.50	6.25 – 6.50
68-70 350-360 e.p. gasoline	7.50 – 7.75	7.00 – 7.25	7.00 – 7.25
‡Domestic Aviation Gasoline	7.50 – 8.50	7.50 – 8.50	7.50 – 8.50

‡Prices based on U. S. Gov't. specifications or better. Present Gov't. specifications require distillation range of 5% recovery at not more than 167° F., and not less than 122° F.; 50% rec. at 221°; 90% at 311°; 96% at 347°; end point, 374°F. Fighting grade in some instances sells at a premium over domestic aviation grade.

PENNSYLVANIA (F. o. b. Western Pennsylvania refineries)

52-54 Naphtha	6.50 – 6.75	6.875– 7.50	6.875– 7.50
54-56 Naphtha	6.50 – 6.75	6.875– 7.50	6.875– 7.50
58-60 U.S. Motor 437 e.p.	6.50 – 7.00	6.75 – 7.375	6.75 – 7.50
60-62 400-410 e.p. gasoline	6.75 – 7.25	7.00 – 7.50	7.00 – 7.75
64-66 390 e.p. gasoline	7.50 – 8.25	7.50 – 8.25	7.50 – 8.25
68-70 350-360 e.p.	8.25 – 8.50	8.00 – 8.75	8.00 – 8.75

OHIO (Quotations of S. O. Ohio. 4c state tax to be added.)

U. S. Motor Gasoline			
Ohio, delivery at any point	9.00	11.00	11.00

KANSAS (F. o. b. refinery Kansas destination)

60-62 437 e.p. gasoline	7.00 – 7.25	7.00 – 7.25	7.00 – 7.25
60-62 400 e.p. gasoline	7.25 – 7.50	7.25 – 7.50	7.25 – 7.50
64-66 375 e.p. gasoline	7.50 – 7.75	7.50 – 7.75	7.50 – 7.75

NORTH TEXAS (F. o. b. North Texas refineries)

56-58 450 e.p. gasoline	5.50 – 5.75	5.50 – 5.75	5.50 – 5.75
58-60 450 e.p. gasoline	5.50 – 5.75	5.50 – 5.75	5.50 – 5.75
58-60 U.S. Motor 437 e.p.	6.125– 6.25	6.00 – 6.25	6.00 – 6.25
60-62 400 e.p. gasoline	6.50	6.25 – 6.50	6.25 – 6.50
64-66 390 e.p. gasoline	6.50 – 6.75	6.50	6.50
64-66 375 e.p. gasoline	6.75	6.50 – 6.75	6.50 – 6.75
68-70 350-360 e.p. gasoline	7.25	6.75 – 7.00	6.75 – 7.00

WEST TEXAS (F. o. b. West Texas refinery, for unrestricted shipment)

50-52 naphtha	5.50	5.50	5.25
58-60 437 e.p. gasoline	5.75 – 6.00	5.75 – 6.00	5.50
58-60 U.S. Motor 437 e.p. gasoline	6.25 – 6.50	6.25 – 6.50	6.25

NORTH LOUISIANA (N. La., Ark. and Miss. destination)

58-60 U.S. Motor 437 e.p.	6.50	6.50	6.50

ARKANSAS (Ark., N. La. and Miss. destination)

58-60 U.S. Motor 437 e.p.	6.50	6.50	6.50

CALIFORNIA (3c tax to be added to California gasoline prices if used in state.)

54-58 U.S. Motor 437 e.p.	9.00 –12.00	8.00 – 9.50	8.50 – 9.75
54-58 U.S. Motor, for outside state shipment	8.00 –10.00	7.50 – 8.75	7.50 – 8.75
58-61 375-400 e.p. gasoline	11.00 –13.00	9.00 –11.00	9.50 –11.00
42-45 Engine Distillate 445-480 e.p.	8.00 – 9.25	7.75 – 9.00	7.75 – 9.00

NATURAL GASOLINE

(Note: End point of all grades, not over 375F. Corrosion test adopted Oct. 1, 1927; A.S.T.M. Method D130-27T; doctor test, July 2, 1928.)

OKLAHOMA (F. o. b. Oklahoma refineries)

Grade AA, 80-87.9, 90% Recovery	6.00	5.75	5.50
Grade A, 72-79.9, 90% Recovery	6.00	5.75	5.50
Grade BB, 84-92, 85% Recovery	6.00	5.75	5.50
Grade B, 76-83.9, 85% Recovery	6.00	5.75	5.50
Grade C, 80-92, 78% Recovery	6.00	5.75	5.50

NORTH TEXAS (F. o. b. Breckenridge)

Grade AA, 80-87.9, 90% Recovery	6.00	5.75	5.50
Grade A, 72-79.9, 90% Recovery	6.00	5.75	5.50
Grade BB, 84-92, 85% Recovery	6.00	5.75	5.50
Grade B, 76-83.9, 85% Recovery	6.00	5.75	5.50
Grade C, 80-92, 78% Recovery	6.00	5.75	5.50

NORTH LOUISIANA (F. o. b. Monroe District)

	Prices Sept. 22	Prices Sept. 15	Prices Sept. 8
Grade AA	†6.00	†5.75	†5.50
Grade BB	†6.00	†5.75	†5.50
Grade C	†6.00	†5.75	†5.50

CALIFORNIA (F. o. b. California refineries)

75-85, 375-390 e.p. for blending	7.25 – 8.50	7.25 – 8.25	7.25 – 8.25

BURNING OILS

PENNSYLVANIA (F. o. b. Western Pennsylvania refineries)

45 w. w. kerosine	4.875– 5.25	5.00 – 5.25	4.75 – 5.125
46 w. w. kerosine	5.25 – 5.50	5.25 – 5.50	4.875– 5.00
47 w. w. kerosine	5.375– 6.00	5.375– 6.00	5.125– 5.50
300 mineral seal	5.50 – 6.00	5.50 – 6.00	5.50 – 6.00

OKLAHOMA (F. o. b. Oklahoma refineries)

41-43 w.w. kerosine	3.125– 3.50	3.125– 3.50	3.125– 3.50
42-44 w.w. kerosine	3.50 – 4.00	3.50 – 4.00	3.50 – 4.00

KANSAS (F. o. b. refinery Kansas destination)

41-43 w.w. kerosine	4.25 – 4.50	4.25 – 4.50	4.25 – 4.50
42-44 w.w. kerosine	4.75 – 5.00	4.75 – 5.00	4.75 – 5.00

NORTH TEXAS (F. o. b. North Texas refineries)

40-42 w.w. kerosine	3.00	3.00	3.00
41-43 w.w. kerosine	3.00 – 3.25	3.00 – 3.25	3.00 – 3.25

NORTH LOUISIANA (N. La., Ark. and Miss. destination)

41-43 w.w. kerosine	4.00 – 4.25	4.00	4.00
42-44 w.w. kerosine	4.25 – 4.50	4.25 – 4.50	4.25 – 4.50

ARKANSAS (Ark., N. La. and Miss. destination)

41-43 w.w. kerosine	4.00	4.00	3.75

CALIFORNIA (F. o. b. California refineries)

38-40 w.w. kerosine	5.00 – 6.00	5.00 – 6.00	5.00 – 6.00

NEUTRAL OIL

PENNSYLVANIA (F. o. b. Western Pennsylvania refineries)

Vis.	(Viscosity at 70° F.)		
200 No. 3 Assoc. Filt.	18.00 –21.00	18.00 –21.00	18.50 –21.00
180 No. 3 Assoc. Filt.	16.00 –17.00	16.00 –17.50	16.00 –17.50
150 No. 3 Assoc. Filt.	11.50 –13.00	11.50 –13.00	12.00 –13.00
	(Non Viscous)		
34 Grav. 330-340 Flash	5.75 – 6.50	5.75 – 6.50	5.75 – 6.50

****MID-CONTINENT** (F. o. b. Mid-Continent refineries)

Vis. Color	(Viscosity at 100° F.)		
100—No. 2	6.00	6.00	6.00
150—No. 3	7.50	7.50	7.50
150—No. 4	7.00	7.00	7.00
180—No. 3	8.00 – 9.00	8.00 – 9.00	8.00 – 9.00
180—No. 4	8.50	8.50	8.50
180—No. 5	8.00	8.00	8.00
200—No. 3	10.00 –10.50	10.00 –10.50	10.00 –10.50
200—No. 4	10.00	10.00	10.00
200—No. 5	9.50	9.50	9.50
220—No. 3	12.50	12.50	12.50
220—No. 4	12.00	12.00	12.00
220—No. 5	11.00	11.00	11.00
240—No. 3	13.50 –14.00	13.50 –14.00	13.50 –14.00
240—No. 4	12.50 –13.00	12.50 –13.00	12.50 –13.00
240—No. 5	12.00	12.00	12.00
280—No. 3	16.00	16.00	16.00
280—No. 4	15.00	15.00	15.00
280—No. 5	14.00	14.00	14.00

†Prices nominal ††Only one refiner quoting *Quotations only

**Represents Both Sales and Quotations.

Refinery Markets Wax, Lubricants, Heavy Oil

Prices given below are in cents per gallon, except where $ is shown. They represent prices made only to domestic jobbers who resell to the consuming public, except where otherwise noted.

(For quick reference to Refinery Prices, get the OIL PRICE HANDBOOK, published annually)

GULF COASTAL (F. o. b. Gulf Coastal refineries)

Vis. Color	Prices Sept. 22	Prices Sept. 15	Prices Sept. 8
	(Viscosity at 100° F., pour test 0)		
100—No. 2 Pale	6.50 – 7.00	6.50 – 7.00	6.50 – 7.00
200—No. 3 Pale	9.50 – 9.75	9.50 – 9.75	9.50 – 9.75
300—No. 3 Pale	10.75 –11.00	10.75 –11.00	10.75 –11.00
500—No. 3½ Pale	12.00 –12.25	12.00 –12.25	12.00 –12.25
750—No. 4 Pale	13.50 –13.75	13.50 –13.75	13.50 –13.75
1200—No. 5 Pale	16.00 –16.50	16.00 –16.50	16.00 –16.50
2000—No. 4 Pale	17.00 –17.50	17.00 –17.50	17.00 –17.50
200—No. 5½ Red Oil	8.75 – 9.00	8.75 – 9.00	8.75 – 9.00
300—No. 5½ Red Oil	10.00 –10.25	10.00 –10.25	10.00 –10.25
500—No. 6 Red Oil	11.25 –11.50	11.25 –11.50	11.25 –11.50
750—No. 6 Red Oil	12.75 –13.00	12.75 –13.00	12.75 –13.00
1200—No. 5-6 Red Oil	15.00 –15.25	15.00 –15.25	15.00 –15.25
2000—No. 6 Plus Red Oil	17.00 –17.50	17.00 –17.50	17.00 –17.50

‡CALIFORNIA (F. o. b. California refineries)

Vis. Color	(Viscosity at 100° F.)		
100—No. 3	9.50 –10.00	9.50 –10.00	9.50 –10.00
200—No. 3	11.50	11.50	11.50
300—No. 3	13.00	13.00	13.00
450—No. 3	15.50	15.50	15.50
550—No. 3	16.50	16.50	16.50
600—No. 3	17.00	17.00	17.00
200—No. 5	11.00	11.00	11.00
300—No. 5	12.00	12.00	12.00
400—No. 5	14.00	14.00	14.00
500—No. 5	15.00	15.00	15.00
600—No. 5	16.00	16.00	16.00
700—No. 7	18.00	18.00	18.00

‡Neutral oils not manufactured commercially in California.

CYLINDER STOCKS

MID-CONTINENT (F. o. b. Mid-Continent refineries)

(Bright stock prices represent quotations to domestic jobbers only.

190-200 Vis. D at 210° Brt. St.	30.00	30.00	30.00
150-160 Vis. D at 210° Brt. St., 15-20 cold test	23.00 –25.00	24.00 –25.00	24.00 –25.00
150-160 Vis. D Brt. Stock, 25-45 cold test	22.00 –24.00	23.00 –24.00	23.00 –24.00
150-160 Vis. E 210° Brt. St.	23.00	23.00	23.00
600 St. Ref. Olive Green	8.00	8.00	8.00
600 St. Ref. Dark Green	8.00	8.00	8.00
Black Oil	5.00	5.00	5.00

PENNSYLVANIA (F. o. b. Western Penna. refineries) (A.S.T.M. Tests)

600 Steam Refined, filterable	11.00 –11.50	11.00 –11.50	11.00 –11.50
650 Steam Refined	15.00 –16.00	15.00 –17.00	15.00 –17.00
600 Flash	17.00 –19.00	17.00 –19.00	18.00 –21.00
630 Flash	25.50 –28.00	25.50 –28.00	25.50 –28.00
600 Warren E	16.50 –18.00	16.50 –18.00	16.50 –18.00
600 Oil City E	15.50 –17.00	15.50 –17.00	15.50 –17.00
600 D Filtered	19.00 –21.00	19.00 –21.00	19.00 –21.00
Cold Test Stock, 140-150 vis. at 210°, 540-550 flash, No. 8 color, below 35 pour test	23.50 –27.00	25.00 –27.00	25.00 –27.00
No. 8 color, above 35 pour test	21.00 –23.00	22.00 –25.00	23.00 –25.00
No. 6-6½ color diluted, 40-50 pour test	20.00 –22.00	21.00 –23.00	21.00 –23.00

WAX

PENNSYLVANIA (Per pound, F. o. b. New York)

122-124 white crude scale, a.m.p.	2.375– 2.50	2.375– 2.50	2.375– 2.50
124-126 white crude scale, a.m.p.	2.375– 2.50	2.375– 2.50	2.375– 2.50

****OKLAHOMA** (Per pound in barrels; in a few instances, per pound in burlap bags; F. o. b. Oklahoma refineries.)

124-126 White Crude Scale, a.m.p.	2.25	2.125– 2.25	2.00 – 2.125

DISTILLATE, GAS AND FUEL OIL

PENNSYLVANIA (For outside Pittsburgh district)

36-40 fuel oil	4.00 – 4.25	4.00 – 4.25	4.00 – 4.25
30-34 fuel oil	4.00	4.00	4.00
23-28 fuel oil	4.00	4.00	4.00

†Prices nominal **††Only one refiner quoting** ***Quotations only**

OKLAHOMA (F. o. b. Oklahoma refineries)

	Prices Sept. 22	Prices Sept. 15	Prices Sept. 8
38-40 straw distillate	2.875– 3.125	2.875– 3.125	2.875– 3.125
36-38 straw distillate	2.75 – 2.875	2.75 – 2.875	2.75 – 2.875
32-36 straw gas oil	2.50 – 2.625	2.50	2.375– 2.50
32-36 straw gas oil zero	2.75	2.625– 2.75	2.625– 2.75
32-36 dark gas oil	2.25 – 2.375	2.125– 2.375	2.125– 2.375
32-36 dark gas oil zero	2.625– 2.75	2.50 – 2.625	2.375– 2.50
28-30 zero fuel oil (per bbl.)	$0.85 – 0.90	$0.85 – 0.90	$0.85 – 0.90
28-30 fuel oil (per bbl.)	$0.80 – 0.825	$0.80 – 0.825	$0.80 – 0.825
26-28 fuel oil (per bbl.)	$0.70 – 0.75	$0.70 – 0.75	$0.70 – 0.75
24-26 fuel oil (per bbl.)	$0.575– 0.65	$0.575– 0.65	$0.575– 0.65
22-26 fuel oil (per bbl.)	$0.575– 0.60	$0.575– 0.60	$0.575–$0.60
18-22 fuel oil (per bbl.)	$0.475– 0.525	$0.475– 0.525	$0.475– 0.525
16-20 fuel oil (per bbl.)	$0.425– 0.475	$0.425– 0.475	$0.425– 0.475
14-16 fuel oil (per bbl.)	$0.40 – 0.45	$0.40 – 0.45	$0.40 – 0.45

KANSAS (F. o. b. refinery Kansas destination)

38-40 straw distilllate	3.25 – 3.50	3.25 – 3.50	3.25 – 3.50
36-38 straw distillate	3.00	3.00	3.00
32-36 straw gas oil	3.00	3.00	3.00
18-22 fuel oil (per bbl.)	$0.70 – 0.75	$0.70 – 0.75	$0.70 – 0.75
10-14 fuel oil (per bbl.)	$0.55 – 0.65	$0.55 – 0.65	$0.55 – 0.65

NORTH TEXAS (F. o. b. North Texas refineries)

38-40 straw distillate	2.75 – 3.00	2.75 – 3.00	2.75 – 3.00
38-40 p.w. treated distillate	3.125– 3.25	3.125– 3.25	3.125– 3.25
32-36 gas oil, cracked	2.375– 2.50	2.375– 2.50	2.375– 2.50
32-36 St. reduced gas oil	2.25 – 2.375	2.00 – 2.25	2.00 – 2.25
24-26 fuel oil (per bbl.)	$0.50 –$0.55	$0.50 –$0.55	$0.50 –$0.55
20-24 fuel oil (per bbl.)	$0.45 –$0.50	$0.45 – 0.50	$0.45 –$0.50
18-22 fuel oil (per bbl.)	$0.40 –$0.45	$0.40 –$0.45	$0.40 –$0.45

****WEST TEXAS** (F. o. b. West Texas refinery, or unrestricted shipment)

34-38 gas oil	2.25 – 2.50	2.25 – 2.50	2.25 – 2.50
30-32 gas oil	1.875– 2.125	1.875– 2.125	1.875– 2.125
28-30 zero gas oil	2.25 – 2.50	2.25 – 2.50	2.25 – 2.50
18-22 fuel oil (per bbl.)	$0.50 –$0.60	$0.50 –$0.60	$0.50 –$0.60

NORTH LOUISIANA (N. La., Ark. and Miss. destination)

32-36 gas oil, dark	*3.25	*3.25	*3.25
32-36 gas oil, straw	*3.25	*3.25	*3.25
14-16 fuel oil (per bbl.)	$0.75 –$0.85	$0.75	$0.75

ARKANSAS (Ark., N. La. and Miss destination)

32-36 gas oil, straw	3.25	3.25	3.25
32-36 dark gas oil	3.25	3.25	3.25
28-30 gas oil	3.00	3.00	3.00
20-24 fuel oil (per bbl.)	$0.90 –$0.95	$0.90 –$0.95	$0.90 –$0.95
9-12 fuel oil (per bbl.)	$0.70 –$0.75	$0.70 –$0.75	$0.70 –$0.75
Black oil	3.25	3.25	3.25

CALIFORNIA (F. o. b. San Joaquin Valley. Nominal pipe line charge to San Francisco 24c per bbl. more and to San Pedro 20c per bbl. more.)

14-18 fuel oil (per bbl.)	$0.55 – 0.65	$0.50 – 0.65	$0.55 –$0.65
14-18 Bunker oil (per bbl.)	$0.70 – 0.85	$0.70 – 0.85	$0.70 –$0.85
30-34 gas oil (per bbl.)	$0.85 – 1.00	$0.85 – 1.00	$0.85 –$1.00
27 Plus Diesel oil (per bbl.)	$0.85 – 1.00	$0.85 – 1.00	$0.85 –$1.00

PETROLATUMS

PENNSYLVANIA (Per pound, in barrels, carload lots, f. o. b. refinery. In tank cars ⅝c to ¾c per pound less.) Two refiners quoting.

Snow White	8.50	8.50	8.50
Lily White	7.50	7.50	7.50
Cream White	6.50	6.50	6.50
Light Amber	3.375– 3.625	3.375– 3.625	3.375– 3.625
Amber	3.125– 3.375	3.125– 3.375	3.125– 3.375
Red	2.875– 3.00	2.875– 3.00	2.875– 3.00

PETROLEUM COKE

****OKLAHOMA** (F. o. b. Oklahoma refineries)

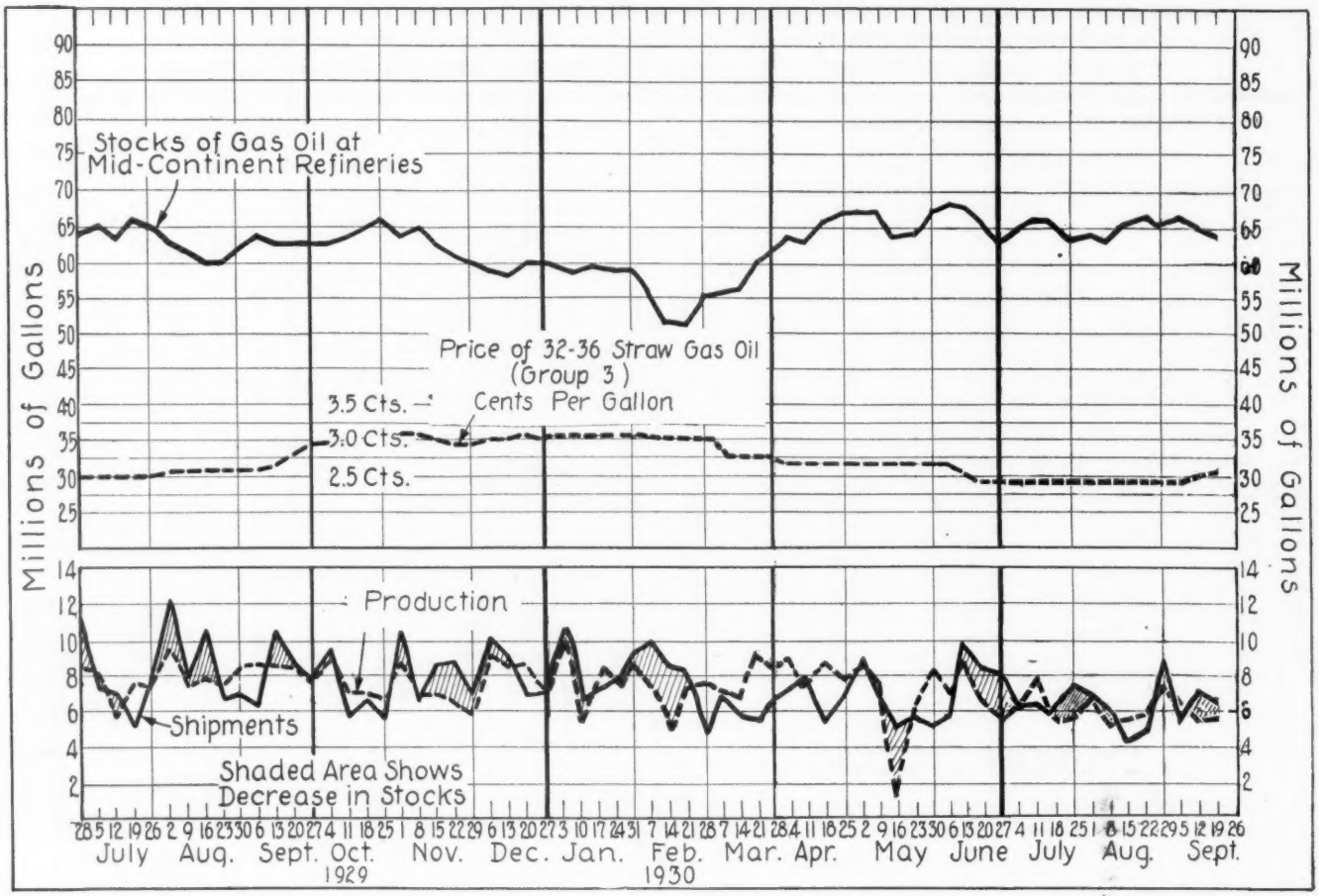
(Per ton in car lots)

Lump	$4.50 –$5.00	$4.50 –$5.00	$4.50 –$5.00
Still run	$2.00	$3.00	$3.00
Breeze	$3.00	$2.00	$2.00

****Represents Both Sales and Quotations.**

Barometer of Mid-Continent Refinery Market—Week Ending September 19

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 93 Plants to National Petroleum News


Stocks of Gas Oil at Mid-Continent Refineries
Price of 32-36 Straw Gas Oil (Group 3)
Cents Per Gallon
3.5 Cts.
3.0 Cts.
2.5 Cts.
Production
Shipments
Shaded Area Shows Decrease in Stocks
Millions of Gallons
July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept.
1929
1930

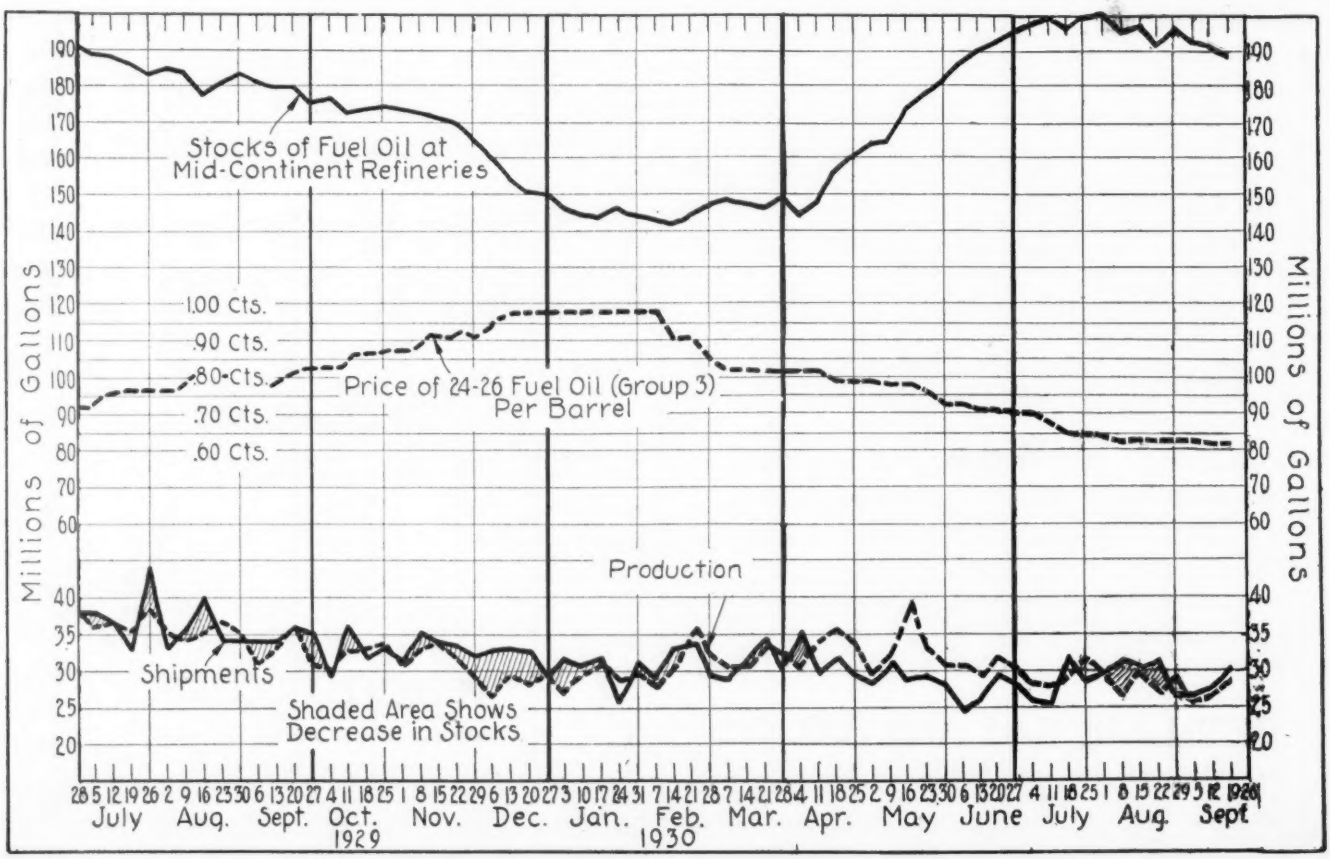


FIGURE 106-A

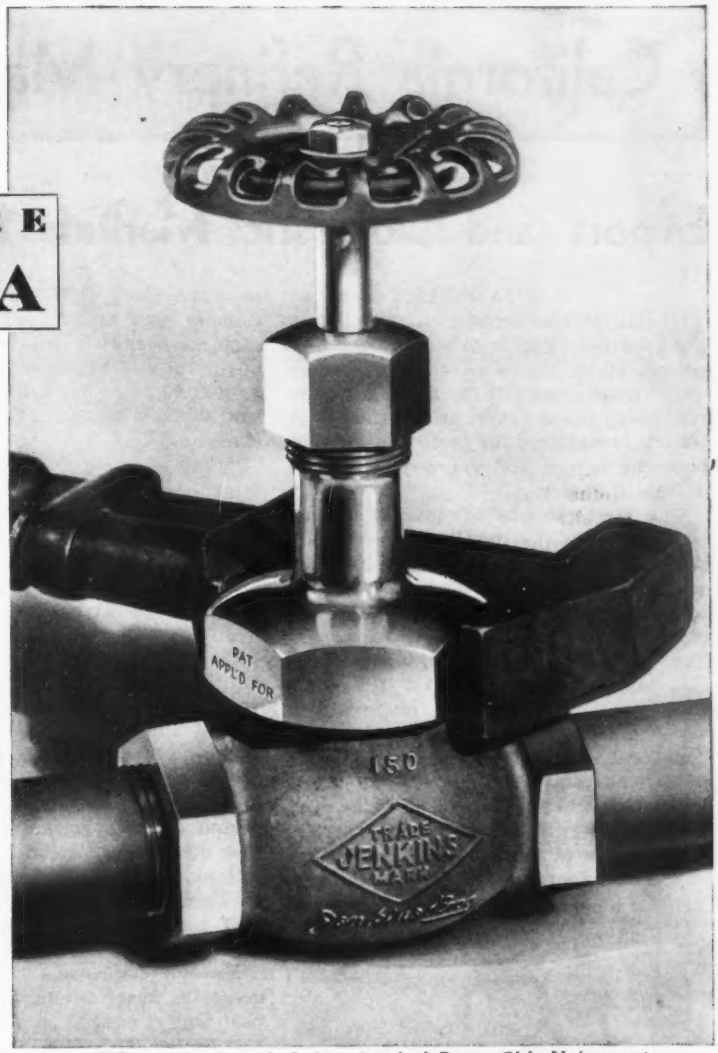


FIG. 106-A, *Screwed, Jenkins Standard Bronze Globe Valve, with one-piece screw-over bonnet and slip-on stay-on disc holder. For 150 lbs. steam working pressure, or 250 lbs. oil, water, gas working pressure.*

See this one-piece screw-over bonnet valve at the oil show

[JENKINS BOOTHS 35-36 in the California Building]

HERE is the valve that doesn't "fear" a wrench. It is a Fig. 106-A Jenkins Standard Bronze Globe with the one-piece screw-over bonnet.

This bonnet construction provides unusual strength to resist the strains of frequent removal. You can take the bonnet off and replace it repeatedly, and it won't distort. The large hex faces enable you to get a full purchase with a wrench.

Another advantage of Fig. 106-A is the slip-on stay-on disc holder . . . a real innovation possible only in this screw-over bonnet design.

Ask to examine this unique valve at Jenkins Booths 35 and 36 in the California Building at the Petroleum Exposition at Tulsa, October 4 to 11. See also Jenkins Iron Body Double Disc Parallel Seat Gate Valves and the full line of Jenkins iron body and bronze valves for oil, water and gas. If you are not attending the exposition, write for special bulletins about the valves in which you may be interested.

JENKINS BROS.

80 White Street, New York, N. Y. — 524 Atlantic Avenue, Boston, Mass. — 133 No. Seventh Street, Philadelphia, Pa.
646 Wash. Blvd., Chicago, Ill. — 1121 No. San Jacinto, Houston, Tex.
JENKINS BROS., Limited, Montreal, Canada; London, England
Factories: Bridgeport, Conn.; Elizabeth, N. J.; Montreal, Canada

Jenkins
VALVES
Since 1864

JENKINS VALVES ARE ALWAYS MARKED WITH THE "DIAMOND"

California Refinery Market

Export and Domestic Markets Improve

LOS ANGELES, Sept. 20

MARKETING conditions along the entire Pacific Coast were reported much improved the past week. The trade generally were optimistic regarding the outlook, an attitude that was substantiated by better prices in both the export and domestic branches of the industry.

The simultaneous advance of 1 cent per gallon in the gasoline price structure and a cut in the posted price of refinable crude by Standard of California late last week was credited for the improved conditions. Although The Texas Co. and the Associated Oil Co., lagged several days in following these price revisions, all major units were in accord as the week closed.

Several exporters reported increased inquiries from Atlantic seaboard, and foreign buyers for gas oil and gasoline.

One trader indicated he had placed two cargoes of gas oil for October lifting. The approximate price was said to have been $0.87 per barrel. Although both lots, about 75,000 barrels each, were purchased by a New York buyer, it was expected only one would go to the east coast. The other was said to be scheduled for a South American port.

Another Atlantic seaboard buyer was reported seeking a spot cargo of California gasoline. However, no sale materialized, as the offered price was said to be about 6 cents in the face of Standard of California's offered price of 6.50 cents f.o.b. San Pedro.

Other scattered inquiries from far eastern and South American accounts indicated a possible deal for a quantity of cased kerosine and gasoline, if the offered and quoted prices could be reconciled. It was evident the buyers expected to buy at extremely low figures.

Members of the export trade also reported a tendency toward higher bulk fuel oil prices. Although present quotations for fuel oil continued to range between $0.60 and $0.85 per barrel, several refiners were holding out for at least $0.70.

Marked improvement was noted in domestic gasoline markets during the past seven days. Traders, who had prophesied the collapse of a higher motor fuel price structure, admitted conditions were improved although one compared the situation to a stack of cards with the independent refiners holding important positions at the bottom of the stack.

Resellers in and around Los Angeles were selling gasoline at from 2 to 7.50 cents under the price of 19.50 cents maintained at stations handling major products.

One independent refiner was said to have closed his plant and to be delivering his crude production to major interests who are furnishing him finished gasoline for his retail trade. This has withdrawn considerable surplus gasoline from the local market as this refiner was selling in excess of two million gallons of motor fuel per month, far in excess of his requirements for his own retail outlets.

Some motor fuel was reported available in state at 9 cents, without tax, but a majority of refiners were asking in the neighborhood of 11 to 12 cents in tank car lots. Out of state movement of this commodity was largely at 8 to 10 cents.

MASON CITY, Ia.—Clyde F. Parker, who has been covering northeastern Iowa as sales representative for the National Refining Co., Cleveland, was appointed sub station manager for the company at Mason City recently.

Mr. Parker has been in the selling end of the oil business for 15 years, starting as salesman for the old Hawkeye Oil Co., which was later acquired by the Mid-Continent Petroleum Corp., Tulsa. He then joined the Mason City Oil & Grease Co. with which he held a variety of positions until that company was sold to the Champlin Refining Co., Enid, Okla.

Mr. Parker then organized the Wana Oil Co., Huntington, Ind., with Sol Bronstein and later sold out his interest to the latter. After that he went to the Champlin Refining Co. as tank car representative in Minnesota.

Refiners Help Build Warren Airport

WARREN, Pa., Sept. 20.—Warren's new and only airport has been made possible through the efforts of several well known Pennsylvania refiners, among other Warren business men. It was dedicated during the three-day Labor Day week-end holidays.

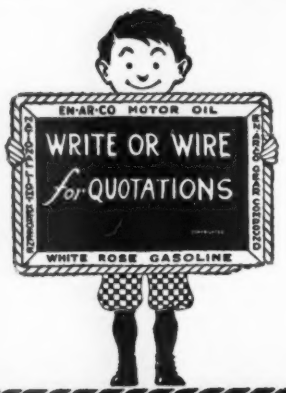
The airport is on the direct route between Pittsburgh and Buffalo, and Buffalo and Williamsport and is but three minutes from the heart of Warren's business district. It is surrounded on three sides by the Allegheny River.

The shortest of its three runways is 2250 feet. These runways are suitable for any size or type of airplane to land and take off from, according to E. M. Farris, vice president and general manager of Warren Airways, Inc., owner and operator of the airport.

A hangar, 200 by 80 feet, has been erected on the field. Night flying equipment, such as beacon lights, flood and boundary lights and red obstacle lights, are being installed.

Airplane manufacturers were encouraged to exhibit their planes during the dedication by being promised not only shelter with a prominent family of Warren, but by being furnished the new aviation gasoline of the United Refining Co., Warren, called its Keystone Aviation gasoline for all races and stunt flying in which the planes might participate. Motor oil was furnished by the Hyvis Oil Co., Warren, subsidiary of the Fred G. Clark Co., Cleveland.

Among those contributing to the establishment of this new airport are Harry A. Logan, vice president and general manager, United Refining Co.; G. Glen Brockway, G. G. Brockway Co., Warren, and secretary and director, Warren Airways, Inc.; L. C. Jamieson, president, Viking Oil Co., Clarendon; and Harry R. Lewis, vice president and treasurer, Conewango Refining Co., Warren, both of whom are directors of Warren Airways, Inc.



En-ar-co
MOTOR OIL
White Rose
GASOLINE

YOU will make money if you handle these nationally advertised brands.

All grades of lubricating oils and greases.

The National Refining Co.
Cleveland, Ohio

Pennsylvania Markets

All Commodities Quiet

CLEVELAND, Sept. 20.—Prices of most commodities tended toward the downside in the western Pennsylvania market the past week. Kerosine and fuel oil continued to be exceptions to the rule. There was little activity reported in the market at any time during the week. Many of the trade were at the National Petroleum Association meeting in Atlantic City.

Gasoline prices were off 0.125 to 0.25 cent. U. S. Motor was offered during the early days of the week at 6.625 cents against last week's low of 6.75 cents. On Sept. 19 and 20 several sellers reported they had been forced to sell at 6.50 cents to get business. Movement, they said, was far from being brisk, even on contracts. The higher gravity gasolines also were quoted proportionately lower.

The Canadian tariff of 2.50 cents a gallon and sales tax of 1 cent a gallon placed on gasoline Sept. 16 hurt their high gravity gasoline business seriously, several Pennsylvania refiners reported. Considerable high gravity gasoline, largely 64-66, 390 end point, has been shipped to Canada in recent years. Following the tariff announcement there was almost a complete cessation of buying from Canada, they said.

There were occasional offerings of kerosine and fuel oil at prices slightly under the general market, but these were largely distress offerings of brokers who had over-anticipated their requirements. These offerings were not sufficient to hurt the general price structures for these commodities.

Demand for bright stock continued at a standstill, according to most reports. Lower prices were recorded for all grades in the course of the week. No. 8 color bright stock with 35 pour test or lower was quoted by some sellers at 24 cents, a reduction of 1 cent a gallon. Dark bright was offered at 20 cents a gallon by two sellers.

Neutral oils and cylinder stocks for the most part were steady. The 150 vis. No. 3 color neutral oil was offered 0.5 cent lower but other grades were unchanged. Steam refined stocks remained unchanged in price.

To Build French Refinery

WASHINGTON, Sept. 20.—Three French oil companies have merged for the purpose of building a refinery at Dunkirk with a capacity of 2,100,000 barrels per year according to a report to the U. S. Department of Commerce. Later the plant may be enlarged to a capacity of 3,500,000 barrels per year.

The three companies involved are the Raffinerie du Nord, Union des Mines and the Petrofina. The merger will have a capitalization of $3,920,000.

Continental

Gasoline Hose

Built to Underwriters' Standards

More pumps today are equipt with Continental than ever before

There's a Reason!!

Steady dependable service

Heavy non-leak cast brass couplings

Speedy delivery from branch nearest you

ATLANTA, GA.
419 Ponce de Leon Ave.
BALTIMORE, MD.
112 W. Pratt St.
BOSTON, MASS., 200 Congress St.
BUFFALO, N. Y., 885 Niagara St.
CHICAGO, ILL.
27 West Illinois St.
CLEVELAND, O.
203 Perry Payne Bldg.
DAYTON, O., 116 So. St. Clair St.
DETROIT, MICH., 5423 12th St.
MILWAUKEE, WIS.
3223 McKinley Blvd.
NEW YORK, N. Y.
152 Chambers St.
PHILADELPHIA, PA.
313-319 New St.
PITTSBURGH, PA., 300 Penn Ave.
ST. LOUIS, MO.
221-223 No. 3rd St.
TOLEDO, O.
415 Michigan St.

Continental Rubber Works
Erie, Pa., U. S. A.

Eastern Domestic Markets

Gasoline Prices Down 0.25 Cent

Staff Special
NEW YORK, Sept. 20

THERE was a general reduction in east coast gasoline prices during the week ended Sept. 20, and also in Bunker C fuel oil prices. Spot demand for gasoline was only fair. Tank wagon prices in several districts continued at low levels. Kerosine prices in several up-state New York districts have been revised.

The gasoline price reduction for tank car delivery was 0.25 cents in all districts where lower prices were recorded. It brought the New York price down to 7.75 cents minimum, and the Norfolk, Charleston, Savannah, and Jacksonville markets down to 8.50 cents flat. Providence quotations were at 8.50 to 9 cents, delivered. California gasoline at New York and Baltimore was quoted at 8 to 8.25 cents and at Philadelphia at 8.25 to 8.50 cents.

The price recessions reflected the actual condition of the market which, in virtually all instances, was reported slow or at best, fair. Contracts shipments, however, were being ordered out promptly and there was no refiner reported to be long of stocks.

The New York price was the direct result, the trade said, of low barge prices which in turn were caused by low tank wagon prices in several districts. These barge prices applied principally to shipments within the harbor where, in Brooklyn, the Bronx and a part of Long Island, tank wagon markets were extremely low. However, some barge business at 7.50 cents was accepted from New England jobbers and reports were that price could be shaded with firm offer.

There was very little shading of 7.75 cents for tank car shipments from New York harbor. Some sellers in this district said they were not competing for barge business as the price had become so low that it was no longer profitable for them to operate. There was some shading reported in New England and Philadelphia but actual sales under prevailing postings could not be traced.

Inactivity of spot market buyers of kerosine and the keen competition for business has resulted the past week or so in the Standard of New York cutting tank wagon kerosine prices at several upstate and New England points. New York City, Boston and Providence prices are down to 10 cents since reductions were started late in June, while Buffalo and Rochester prices have fallen to 9 cents. No recent changes in tank car prices have been made in any district.

On Sept. 18 Standard Oil Co. of New Jersey reduced Bunker C fuel oil prices 10 cents per barrel at New York, Baltimore, Norfolk and Charleston. New price is $1.05 per barrel at the first three points and $1.00 at Charleston. This announcement was made late in the afternoon of Sept. 17 and on the same date the Colonial Beacon Oil Co., standard subsidiary, announced a similar reduction at Boston to $1.05.

These cuts bring the market to the price level existing last spring when, on April 9, there was a general advance of 10 cents per barrel. Standard did not reduce prices at the Gulf. Previously it was announced that the cut would be effective in the Panama Canal Zone, but this statement was retracted later.

According to officials of Standard the action was taken primarily to benefit owners of freight boats plying coastwise and trans-Atlantic.

Gulf Coast Markets

Reported Association Prices Reduced

Staff Special
NEW YORK, Sept. 20

REPORTS that the Export Petroleum Association had lowered its posted prices for bulk gasoline and kerosine at the Gulf caused quite some excitement among the New York oil trade the past week. There was a little activity in the market, but this was greatly overshadowed by the talk of lower prices.

The rumor that the Association had reduced prices on all of the commodities it posts at the Gulf was heard a week ago. It was in slightly different form than later reports. Both reports have failed to receive official confirmation of the Association.

According to several traders these prices are now being quoted by members of the Association; U. S. Motor, 6.50 cents; 60-62, 400 e. p., gasoline, 7.50 cents; 61-63, 390 e. p. gasoline, 7.75 cents; and 64-66, 375 e. p. gasoline, 8 cents.

The above prices apply, it was said, to gasoline moving only to France, Germany and Belgium and represent quotations f.o.b. the U. S. Gulf. For shipment to England these prices apply, the trade said: U. S. Motor, 6 cents; 60-62, 400 e. p. gasoline, 7 cents; 61-63, 390 e. p. gasoline, 7.25 cents; and 64-66, 375 e. p. gasoline, 7.50 cents. Kerosine was reduced one cent to 5 cents and 6 cents respectively, for 41-43 prime white and 44 water white. Also the differential under Gulf prices allowed the California refiner was narrowed to 1 cent compared with 1.25 cent allowed previously.

From headquarters of the Association came the denial that these prices were not in effect and that members had reached no agreement to make a change of any kind. However, it was indicated that these companies were cognizant of the great difference between American and foreign prices and the effect it had on American shipments. For this reason a poll was being taken among the member companies to determine what action was warranted and what prices would prevail should a revision be made.

On the other hand several of the trade insisted they had received the new price information from the most reliable sources. A New York broker assented one of the member companies had quoted him 8 cents f.o.b. the Gulf, firm, on 64-66, 375 end point gasoline and that other members had quoted foreign accounts on the basis of prices given above. He also assented these prices had been in effect for several days.

The general opinion was that if no change had been made already, one would be in the near future. Most traders felt the Association would not pass lightly the fact that an English broker contracted with a French account to move from the U. S. Gulf approximately 350,000 barrels of 64-66, 375 e. p. gasoline at 0.75 cent below the Export Association's posting. Neither, they said, would it fail to consider the movement of a part cargo of 64-66, 375 e. p. gasoline from America to France, handled by a Roumanian concern at 8 cents f.o.b. the U. S. Gulf.

A cargo of 62 gravity Russian naphtha which was received in Baltimore around the middle of the week, was believed to be the first attempt of the Soviets to compete with American refiners on their own ground. This goods was reported to be in exchange for a shipment from a Baltimore exporting company. The trade recalled that in the past the Soviet government has tried to exchange a part of its surplus oil for supplies.

Wax Markets

Prices Generally Unchanged

NEW YORK, Sept. 20.—Wax markets were unchanged during the week ended Sept. 20. Spot demand for all grades was comparatively light and prices were unchanged.

As far as could be learned at the end of the week, the Spanish Monopoly had not purchased all of the 125-127 A.m.p. fully refined wax it was inquiring for in the American market. Some traders were of the opinion this business would be completed at an early date, however.

There seemed to be quite a bit of secrecy regarding the monopoly's order. Several traders indicated the amount sought was between 2000 and 5000 tons but none could say definitely. Part of the order has been purchased at prices current in the market; one or two traders are quoting higher.

White crude scale was freely available at 2.25 cents for spot shipment but there were few orders either from domestic and export buyers. The high of the quotation range—2.375 cents—governed offers on future business.

Must Educate Salesmen, Say Code Backers

ATLANTIC CITY, Sept. 19.—The necessity for educating sales organizations right down the line as to provisions of the code of marketing practices was brought out at a joint meeting of the eastern and northeastern regional code committees here the 17th.

C. G. Sheffield of the Standard Oil Co. of New Jersey, is chairman of the eastern committee and H. H. Fuller of the Sinclair Refining Co., of the northeastern committee. About 25 companies were represented at the meeting and satisfaction was generally expressed at the way the code has functioned in this territory.

The various companies represented endorsed the plan to post at all company stations, and stations of dealers signing the code, the signs which are put out by the American Petroleum Institute showing the station is operating under the code.

The importance of having state code organizations meet monthly was stressed by Paul Hadlick, secretary of the marketing division of the American Petroleum Institute.

Regular monthly meetings, he said, allow complaints of violations or misunderstandings to be discussed promptly and disposed of before they become generally talked about in the district, he said.

Skilled Supervision
Guarantees the Quality of Gulf Products

COASTAL AND PARAFFINE CRUDES
GASOLINE—LUBRICATING OILS
NAPHTHA—GAS—OILS
WAX—PETROLEUM COKE
CYLINDER—ENGINE—CORDAGE

Gulf Refining Company

General Sales Offices
PITTSBURGH, PA.

District Sales Offices
New York, Boston, Philadelphia, Louisville, Atlanta, Houston, New Orleans

"Burning Liquid Fuel"

LEARN real facts which have never been published before on the subject of burning liquid fuel, by W. N. Best, the recognized authority.

Send your order and check for $4 to—

National Petroleum News
1213 W. 3rd Street Cleveland, Ohio

Complete Seaboard Market

(Export Markets for whole year given in OIL PRICE HANDBOOK. Each volume carries refinery, tank wagon, crude and export markets—complete for the whole year)

Eastern Domestic Market

(Prices for tank car lots, f. o. b. refinery or seaboard terminal, representing majority of sales and quotations. Prices shown below do not include inspection tax levied in some states.)

U. S. MOTOR GASOLINE	Prices Sept. 22	Prices Sept. 15	Prices Sept. 8
New York harbor	7.75 – 8.25	8.00 – 8.25	8.00 – 8.25
Portland district	**9.25 – 9.75	**9.25 – 9.75	**9.75 –10.00
Boston district	**8.75 – 9.00	**8.75 – 9.00	**9.00 – 9.50
Providence district	**8.50 – 9.00	**8.75 – 9.25	**9.00 – 9.75
Philadelphia district	8.00 – 8.25	8.00 – 8.25	8.00 – 8.25
Baltimore district	8.00 – 8.25	8.00 – 8.25	8.00 – 8.25
Norfolk district	8.50	8.50 – 8.75	8.50 – 8.75
Charleston district	8.50	8.50 – 8.75	8.50 – 8.75
Savannah district	8.50	8.50 – 8.75	8.50 – 8.75
Jacksonville district	8.50	8.50 – 8.75	8.50 – 8.75
CALIFORNIA, U. S. MOTOR GASOLINE			
New York harbor	8.00 – 8.25	8.00 – 8.50	8.00 – 8.50
Philadelphia district	8.25 – 8.50	8.50	8.50
Baltimore district	8.00 – 8.25	8.25 – 8.50	8.25 – 8.50
‡DOMESTIC AVIATION GASOLINE			
New York harbor	11.50 –13.00	11.50 –13.00	11.50 –13.00
Philadelphia	12.00	12.00	12.00
Baltimore	12.00 –12.50	12.00 –12.50	12.00 –12.50
Boston	11.50 –13.00	11.50 –13.00	11.50 –13.00

‡Prices are based on U. S. Gov't. specifications or better. Present Gov't. specifications require distillation range of 5% recovery at not more than 167°F., and not less than 122°F.; 50% recovery at 221°; 90% at 311°; 96% at 347°; end point 374° F. Gasoline of fighting grade specifications in some instances sells at a premium over domestic aviation grade. Prices represent majority of quotations.

WATER WHITE KEROSINE			
New York harbor	6.75	6.75	6.75
Philadelphia district	6.25 – 6.75	6.25 – 6.75	6.25 – 6.75
Baltimore district	6.50 – 6.75	6.50 – 6.75	6.50 – 6.75
GAS OIL: 28-34 Gravity			
New York harbor	4.50 – 5.00	4.50 – 5.00	4.75 – 5.00
Boston district	4.75 – 5.00	4.75 – 5.00	4.75 – 5.00
FURNACE OIL: 36-40 Gravity			
New York harbor	6.00 – 6.25	6.00 – 6.25	6.00 – 6.25
Boston district	6.00 – 6.25	6.00 – 6.25	6.00 – 6.25
GRADE C BUNKER OIL (Lighterage 5c per bbl. additional)			
New York Harbor	$1.05	$1.15	$1.15
Boston district	$1.05	$1.15	$1.15
DIESEL OIL			
New York harbor	$2.00 –$2.10	$2.00 –$2.10	$2.00 –$2.10

*Minimum delivered. †Nominal. **Delivered prices.

New York Export Market

(Lubricating oils are per gal. in bbls. F.a.s. New York)

	Sept. 22	Sept. 15	Sept. 8
CYLINDER OILS (Pennsylvania Products)			
Bright stock, dark	28.50 –30.50	28.50 –30.50	28.50 –30.50
600 D filtered	26.50 –28.00	26.50 –28.00	26.50 –28.00
600 Warren E filtered	22.50 –25.00	22.50 –25.00	22.50 –25.00
600 stm. refd. unfiltered	16.50 –18.00	16.50 –18.00	17.00 –18.50
650 stm. refd. unfiltered	20.75 –22.00	20.75 –22.00	22.00 –23.00
600 flash, steam refined	23.50 –25.00	23.50 –25.00	23.50 –25.00
630 flash, steam refined	31.50 –33.00	31.50 –33.00	32.00 –33.00
RED ENGINE OILS (Vis. 100°)			
300 vis. No. 6½ color	19.00 –21.00	19.00 –21.00	19.00 –21.00
250 vis. No. 6 color	17.50 –18.50	17.50 –18.50	17.50 –18.50
200 vis. No. 6 color	16.00 –17.00	16.00 –17.00	16.00 –17.00
PALE ENGINE OILS (Vis. 100°)			
230 vis. No. 3¾ color	22.00	22.00	22.00
180 vis. No. 3¼ color	17.50 –18.00	17.50 –18.00	17.50 –18.00
100 vis. No. 2¼ color	14.25 –15.50	14.25 –15.50	14.25 –15.50
MOTOR OILS (Vis. 100°)			
600 vis. No. 7 color	30.00 –32.00	30.00 –32.00	30.00 –32.00
500 vis. No. 6½ color	27.50 –30.00	27.50 –30.00	27.50 –30.00
400 vis. No. 7¼ color	26.00 –29.00	26.00 –29.00	26.00 –29.00
300 vis. No. 6 color	22.00 –26.00	22.00 –26.00	22.00 –26.00
200 vis. No. 6 color	21.00 –23.50	21.00 –23.50	21.00 –23.50

Wax Markets

(Prices in cents per pound, A.S.T.M. tests. A.M.P. F.a.s. carload lots)

NEW YORK	Sept. 22	Sept. 15	Sept. 8
124-126 Yellow crude scale	2.125– 2.25	2.125– 2.25	2.125– 2.25
122-124 White crude scale	2.25 – 2.375	2.25 – 2.375	2.25 – 2.375
124-126 White crude scale	2.25 – 2.375	2.25 – 2.375	2.25 – 2.375
123-125 Fully refined	3.125– 3.25	3.125– 3.25	3.125– 3.25
125-127 Fully refined	3.375– 3.50	3.375– 3.50	3.25 – 3.375
128-130 Fully refined	3.50 – 3.75	3.50 – 3.75	3.50 – 3.75
130-132 Fully refined	3.625– 3.875	3.625– 3.875	3.625– 3.875
133-135 Fully refined	4.25 – 4.50	4.25 – 4.50	4.25 – 4.50
135-137 Fully refined	4.625	4.625	4.625
NEW ORLEANS			
124-126 Yellow crude scale	2.125– 2.25	2.125– 2.25	2.125– 2.25
122-124 White crude scale	2.25 – 2.375	2.25 – 2.375	2.25 – 2.375
124-126 White crude scale	2.25 – 2.375	2.25 – 2.375	2.25 – 2.375
123-125 Fully refined	3.125	3.125	3.125
125-127 Fully refined	3.375	3.375	3.25
128-130 Fully refined	3.50	3.50	3.50
130-132 Fully refined	3.625– 3.75	3.625– 3.75	3.625– 3.75
133-135 Fully refined	4.25 – 4.375	4.25 – 4.375	4.25 – 4.375

Gulf Export Market

(Prices are f. o. b. Gulf oil terminals in Texas and Louisiana, shipments of 20,000 bbls. or more unless otherwise noted. Bulk gasoline and kerosine prices are posted quotations of the Export Petroleum Assoc., Inc., governing about 90% of the gasoline and kerosine shipped to foreign ports from the Gulf)

GASOLINE	Prices Sept. 22	Prices Sept. 15	Prices Sept. 8
U. S. Motor	8.00	8.00	8.00
60-62, 400 e.p.	9.00	9.00	9.00
61-63, 390 e.p.	9.25	9.25	9.25
64-66, 375 e.p.	9.50	9.50	9.50
U. S. Motor, cases (cargoes)	$1.80	$1.80	$1.80
64-66, cases (cargoes)	$1.875	$1.875	$1.875
KEROSINE			
44 water white	7.00	7.00	7.00
41-43 prime white	6.00	6.00	6.00
Water white, cases (cargoes)	$1.60	$1.60	$1.60
Prime white, cases (cargoes)	$1.50	$1.50	$1.50
DOMESTIC GAS & BUNKER OILS			
*26-30 translucent gas oil	3.50 – 3.75	3.50 – 3.75	3.50 – 3.75
*30 plus translucent gas oil	3.75 – 4.00	3.75 – 4.00	3.75 – 4.00
Grade C bunker oil	$1.05	$1.05	$1.05
Grade C bunker oil, cargoes	$0.75 –$0.85	$0.75 –$0.85	$0.75 –$0.85

*Less than ½ of 1% sulphur.

MEXICAN CRUDE AND BUNKER OILS (f. o. b. Steamer, Tampico)			
Heavy Panuco crude taxes to be paid	$0.57 –$0.60	$0.57 –$0.60	$0.55 –$0.60
Grade C bunker oil for bunkering purposes, taxes paid	$1.00	$1.00	$1.00
SOUTH TEXAS LUBRICATING OILS (Viscosity at 100°F. cold test 0 Tanker, f. o. b. Houston)			
100 vis. No. 2 unfiltered pale	5.75 – 6.125	5.75 – 6.125	5.75 – 6.125
200 vis. No. 3 unfiltered pale	8.00 – 8.75	8.00 – 8.75	8.00 – 8.75
300 vis. No. 3 unfiltered pale	8.875– 9.50	8.875– 9.50	8.875– 9.50
500 vis. No. 3½ unfiltered pale	10.25 –11.25	10.25 –11.25	10.25 –11.25
750 vis. No. 4 unfiltered pale	12.50 –13.25	12.50 –13.25	12.50 –13.25
1200 vis. No. 5 unfiltered pale	16.00 –18.00	16.00 –18.00	16.00 –18.00
200 vis. No. 5-6 red oil	7.00 – 7.50	7.00 – 7.50	7.00 – 7.50
300 vis. No. 5-6 red oil	8.375– 8.75	8.375– 8.75	8.375– 8.75
500 vis. No. 5-6 red oil	9.25 – 9.50	9.25 – 9.50	9.25 – 9.50
750 vis. No. 5-6 red oil	11.50	11.50	11.50
1200 vis. No. 5-6 red oil	15.00 – 15.50	15.00 –15.50	15.00 –15.50

Gulf Domestic Market

(Prices are f.o.b. Gulf oil terminals in Texas and Louisiana in shipments of 20,000 bbls. or more, representing sellers' opinions, for domestic shipment only.)

	Sept. 22	Sept. 15	Sept. 8
U. S. Motor gasoline	6.75 – 7.25	6.75 – 7.25	6.75 – 7.25
41-43 w.w. kerosine	4.75 – 5.125	4.75 – 5.125	4.75 – 5.125
*26-32 translucent gas oil	3.75 – 4.00	3.75 – 4.00	3.75 – 4.00

*Less than ½ of 1% sulphur.

Pacific Export Market

(Quotations are at seaboard, Los Angeles, in cargo lots, cents per gallon, except where otherwise noted.)

	Sept. 22	Sept. 15	Sept. 8
Gasoline, U. S. Motor, 53-55 Gravity	6.50 – 7.50	6.50 – 7.50	6.50 – 7.50
Gasoline, U. S. Motor-blends and special cuts	7.25 – 8.25	7.25 – 8.25	7.25 – 8.25
Gasoline, 400 e.p. blends	8.25 – 9.25	8.25 – 9.25	8.25 – 9.25
Gas Oil, 30-34, per bbl.	$0.87 –$1.00	$0.85 –$1.00	$0.85 –$1.00
Diesel Oil, 27 plus, per bbl.	$0.85 –$1.00	$0.80 –$0.90	$0.80 –$0.90
Bunker oil, 14-18, per bbl.	$0.65 –$0.90	$0.65 –$0.90	$0.65 –$0.90
Fuel oil, 14-18 per bbl.	$0.60 –$0.85	$0.60 –$0.85	$0.60 –$0.85
Kerosine, 38-40 w.w., 125-150 flash, per gal.	5.00 – 6.00	5.00 – 6.00	5.00 – 6.00
Cased Goods			
Gasoline, U. S. Motor	$1.75 –$1.85	$1.75 –$1.85	$1.75 –$1.85
Gasoline, 400 e.p.	$1.85 –$2.00	$1.85 –$2.00	$1.85 –$2.00
Kerosine, 38-40 w.w., 125-150 flash	$1.45 –$1.50	$1.45 –$1.50	$1.45 –$1.50

Note: Above Pacific Export market prices for gasoline and kerosine in cargo lots apply only on goods for coastwise shipment. Gasoline and kerosine prices for shipment to foreign ports are determined as follows: Difference in freight between U. S. Gulf to European Continent and California to European Continent —this difference plus 0.125c for handling, deducted from prices posted at U. S. Gulf by the Export Petroleum Assoc., Inc., which are above prices.

Tanker Rates

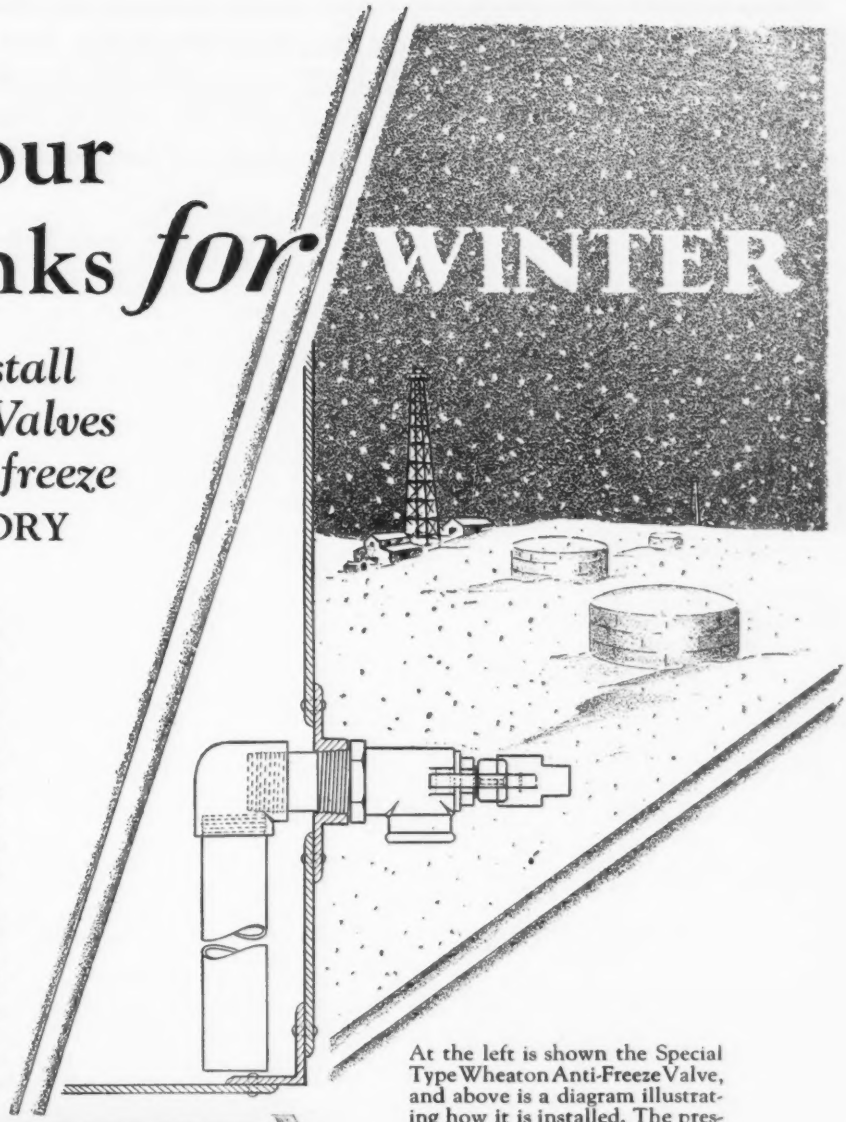
(Approximate tanker freight rates to Continental ports, in shillings per ton of 2240 pounds, British sterling; to American ports, cents per barrel.)

	Sept. 22 Crude &/or Fuel	Sept. 22 Refined Oil &/or Spirits
Calif. to U. K. or Continental ports*	23	21
Gulf to U. K. or Continental ports*	13	12/6
North Atlantic to U. K. or Continental ports*	11	10/6
Calif. to North Atlantic ports (not E. of N. Y.)	$0.60	$0.60
Gulf to North Atlantic ports (not E. of N. Y.)**	16	18

*Continental ports in the range between Bordeaux and Hamburg, both inclusive. **Venezuela loading same rate. For Tampico 2c to 3c per bbl. additional.

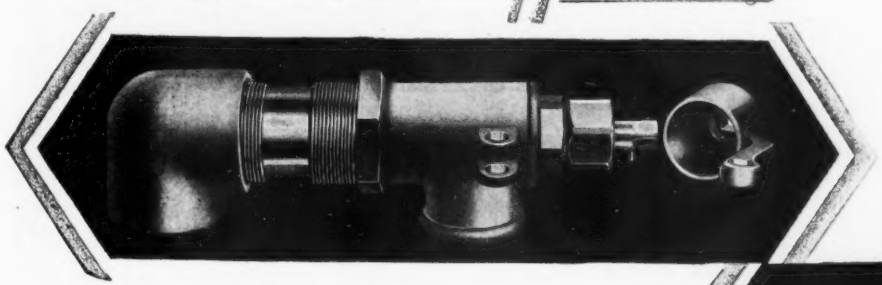
Prepare your Storage Tanks *for* WINTER

Now is the time to install Wheaton Anti-Freeze Valves —the valves that CAN'T *freeze because they* DRAIN DRY

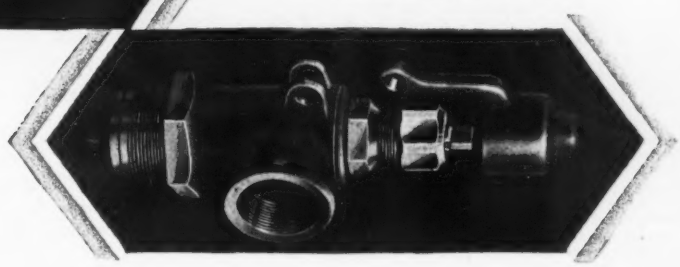


WITH Wheaton Anti-Freeze Valves, the valve seat is located *inside* the tank, while the valve body is located *outside* the tank. As a result, when the valve is closed, the water is *excluded* from the body, and the valve drains *dry*. Consequently, there is no danger of the valve freezing—and no danger of the valve breaking and causing leakage.

Many of the largest oil companies in the United States have installed Wheaton Anti-Freeze Valves. These companies have *removed all danger* of freezing, breakage and loss of product. Their tanks are prepared for winter. Are *yours?* If they are not, *now* is the time to equip your tanks with *Wheaton Anti-Freeze Valves.* Don't let winter find you unprepared. Send for a sample today, and give it your own test. If you are not entirely satisfied, you may return it for credit or refund.



At the left is shown the Special Type Wheaton Anti-Freeze Valve, and above is a diagram illustrating how it is installed. The pressure of the gasoline upon the water at the bottom of the tank forces the water up through the pipe and out through the valve. The Standard Type Wheaton Anti-Freeze Valve, shown below, is designed for installation through the bottom of the tank as well as through the wall.



A. W. WHEATON BRASS WORKS
Newark, New Jersey

Empire Brass Mfg. Co., Ltd., London, Ontario, Canadian Manufacturers and Distributors

Wheaton

FAUCETS · VALVES · JOINTS · COUPLINGS · FILLERS · NOZZLES · FITTINGS

Tank Wagon, Service Station Markets for Gasoline and Kerosine

(OIL PRICE HANDBOOK has t.w. and s.s. markets for a whole year, arranged for quick reference)

These Prices in Effect Sept. 22, 1930, as Posted by Principal Marketing Companies

S.O. NEW JERSEY TERRITORY

	Gasoline T.W.	Tax	Total T.W.	S.S.	Oil T.W.
Atlantic City, N. J.	14.5	2	16.5	18.5	13.5
Newark, N. J.	13.5	2	15.5	17.5	12.5
Annapolis	14	4	18	20	13
Baltimore, Md.	13	4	17.2	19.2	10.5
Cumberland, Md.	15	4	19	21	14
Washington, D. C.	13.7	2	15.7	17.7	12.7
Danville, Va.	14.8	5	19.8	21.8	13.8
Norfolk, Va.	13.3	5	18.3	20.3	11
Richmond, Va.	13.7	5	18.7	20.7	12.7
Roanoke Va.	14	5	19	20	14
Petersburg, Va.	14.3	5	19.3	20	13.3
Charleston, W. Va.	14.5	4	18.5	20.5	12.5
Keyser, W. Va.	15.1	4	19.1	21.1	14.1
Parkersburg, W. Va.	13.2	4	17.2	19.2	11.2
Wheeling, W. Va.	14.4	4	18.4	20.4	12.4
Raleigh, N. C.	15.2	5	20.2	22.2	14.2
Charlotte, N. C.	15.3	5	20.3	22.3	14.3
Hickory, N. C.	15.6	5	20.6	22.6	14.6
Mt. Airy, N. C.	15.5	5	20.5	22.5	14.5
Salisbury, N. C.	15.5	5	20.5	22.5	14.5
Charleston, S. C.	13.3	6	19.3	21.3	12.3
Columbia, S. C.	15.2	6	21.2	23.2	14.2

Note: 2c per gallon discount off t.w. price of gasoline to dealers and commercial consumers thru S. O. New Jersey territory.

CONTINENTAL OIL

Denver, Colo.	12	4	16	19	15.5
Pueblo, Colo.	13	4	17	20	15.5
Grand Junc., Colo.	17.5	4	21.5	24.5	19
Casper, Wyo.	15	4	19	22	14
Cheyenne, Wyo.	16.5	4	20.5	23.5	15.5
Butte, Mont.	19.5	5	24.5	*22	20
Helena, Mont.	19.5	5	24.5	27.5	20
Salt Lake City, Utah.	16.5	3½	20	23	17
Boise, Ida.	18.5	5	23.5	26.5	19
Twin Falls, Ida.	18.5	5	23.5	27.5	19
Albuquerque, N. M.	11	5	16	20	15

*5½c discount to dealers at Butte.

S. O. CALIFORNIA

	Gasoline Tax	Posted Retail Price	Posted Wholesale	Oil T.W.
Phoenix, Ariz.	4	17	20	20
Los Angeles, Cal.	3	20.5	22.5	15.5
Fresno, Cal.	3	21	23	17
San Francisco, Cal.	3	21	23	15.5
Reno, Nev.	4	26	28	19
Portland, Ore.	4	22.5	24.5	16.5
Seattle, Wash.	3	21.5	23.5	16.5
Spokane, Wash.	3	25.5	27.5	20.5
Tacoma, Wash.	3	21.5	23.5	16.5

Note: 6c per gal. discount to dealers off posted wholesale price of gasoline to customers taking tank truck delivery, thru S. O. California territory except 1c discount at Phoenix to dealers only. This discount determines net t.w. price.

S. O. LOUISIANA

	Gasoline T.W.	Tax	Total T.W.	S.S.	Oil T.W.
Little Rock, Ark.	10	5	15	15	12
Alexandria, La.	12.5	*5	17.5	18	†13
Baton Rouge, La.	11.5	4	15.5	16	†13
Lake Charles, La.	12.5	*5	17.5	18	†13
New Orleans, La.	8	5*5	13.5	13.5	†12
Shreveport, La.	11.5	4	15.5	17.5	†13
Lafayette, La.	12.5	*5	17.5	18	†13
Bristol, Tenn.	14.5	5	19.5	21.5	14
Chattanooga, Tenn.	14.5	5	19.5	20	13
Knoxville, Tenn.	14.5	5	19.5	20	15
Nashville, Tenn.	12	5	17	17	15
Memphis, Tenn.	10	5	15	17	12.5

Note: 2c per gallon discount off t.w. price of gasoline to dealers thru S. O. Louisiana territory.

*Lake Charles, Alexandria, New Orleans and Lafayette gasoline tax includes 4c state tax and 1c parish tax. New Orleans kerosine price includes 1c parish tax in addition to 1c state tax.

†Kerosine price in Louisiana includes 1c state tax.

S. O. KENTUCKY

Ashland, Ky.	13	5	18	20	15
Catlettsburg, Ky.	13	5	18	20	15
Lexington, Ky.	14	5	19	20	14.5
Louisville, Ky.	13	5	18	20	13
Covington, Ky.	15	5	20	22	14.5

Latest Changes

Gasoline

S. O. Ohio—T.w. gasoline cut 1c, s.s. cut 2c, thru Henry, Marion and Putnam counties, all to 19c, including 4c tax, **Sept. 17.**

T.w. and s.s. gasoline cut 2c, thru Ohio, to 18c and 19c respectively, including 4c tax, **Sept. 18.** All counties where prices had been below statewide schedule became 18c t.w. and 19c s.s., except Montgomery, Preble, Richland, Stark and Summit, which remained 18c for both t.w. and s.s.

T.w. and s.s. cut 2c, thru Stark county, both to 16c, including tax, **Sept. 19.**

T.w. and s.s. cut 4c, thru Summit county, both to 14c, including tax, **Sept. 19.**

S. O. Kentucky—T.w. up 1c, s.s. up 2c, Pensacola, to 20c and 21c, respectively, **Sept. 15.**

S. O. Indiana—S.s. only cut 2.5c, Detroit, to 14.3c, **Sept. 17.**

S.s. only cut 3c, Saginaw, to 16.9c, **Sept. 14.**

T.w. and s.s. cut 3c, Grand Rapids, to 12.7c and 13.7c, **Sept. 11.**

Magnolia Petroleum—S.s. only cut 1c, Dallas, to 17c, **Sept. 11.**

T.w. only cut 2c, Fort Smith, to 12c, **Sept. 15.**

Continental Oil—T.w. and s.s. up 2c, Albuquerque, to 16c and 20c respectively, **Aug. 29.**

Aviation gasoline cut 4c, Albuquerque, to 20c, including 5c tax, **Aug. 29.**

S. O. California — Correction: Gasoline prices at Phoenix were unchanged in **Sept. 15** general 1c advance. Prices remain 17c wholesale, and 20c retail.

Kerosine

S. O. New York—T.w. kerosine cut 1.5c, Buffalo, to 9c, **Sept. 2.** On June 23 kerosine had been cut 1.3c at Buffalo, to 10.5c.

Kerosine cut 2c, Rochester, to 9c t.w., **Sept 2.** On June 23 it had been cut 1c, to 11c at that point.

Kerosine in metropolitan area, in boroughs of Manhattan, Bronx, Queens and Kings, cut 1.3c, to 10c t.w., **Sept. 8.**

Kerosine cut 1.5c, Boston, to 10c, and cut 1.7c, Providence, to 10c, **Sept. 2.**

S. O. Ohio—Kerosine prices cut 2c, thru Ohio, to 15c, **Sept. 18.** This reduction affected all points except those where 15c prices already were in effect.

Kerosine cut 2c, Henry and Marion counties, to 15c, **Sept. 17.** These two counties were not affected by Sept. 18 cut.

	Gasoline T.W.	Tax	Total T.W.	S.S.	Oil T.W.
Clarksdale, Miss.	14	5	19	21	12.5
Gulfport, Miss.††	15.5	5	20.5	22.5	13
Jackson, Miss.	12	5	17	19	13
Natchez, Miss.	14	5	19	21	13
Vicksburg, Miss.	14	5	19	21	13
Birmingham, Ala.‡‡	14	4	18	20	14.5
Mobile, Ala.‡	14	4	18	18	13.5
Montgomery, Ala.*	15	4	19	21	15
Atlanta, Ga.	13	6	19	21	†14.5
Augusta, Ga.	16	6	22	24	†15.5
Macon, Ga.	14	6	20	22	†13
Savannah, Ga.	12	6	18	20	†14
Jacksonville, Fla.	13	6	19	21	14
Miami, Fla.	15	6	21	23	14
Tampa, Fla.	14	6	20	20	13
Pensacola, Fla.**	14	6	20	21	13.5

Note: Net price of gasoline to dealers is 2c under posted t.w. price thru S. O. Kentucky territory.

*Local privilege tax of 1 cent on gasoline and ½ cent on kerosine at Montgomery included.

†Georgia kerosine prices include 1c state tax.

**Both tank wagon prices include 1c city tax at Pensacola which went into effect Oct. 15, 1926.

††Both tank wagon prices at Gulfport include Harrison county privilege tax of 2c.

‡Mobile gasoline prices include 1c city tax.

‡‡Birmingham gasoline prices include 1c city tax.

S. O. NEBRASKA

Omaha, Neb.	15.25	4	19.25	19.25	13.25
McCook	16.75	4	20.75	22.75	14.75
Norfolk	15.75	4	19.75	21.75	13.75
North Platte	16.75	4	20.75	22.75	14.50
Scottsbluff	13	4	17	17	14.25

Note: Discounts: 1c per gal. off tank wagon price of gasoline for 1,000 gallon dumps per month to consumers taking tank wagon delivery only.

S. O. INDIANA

Chicago, Ill.	15	3	18	19	13
Decatur, Ill.	15.2	3	18.2	19.2	13.1
E. St. Louis, Ill.	14.4	3	17.4	18.4	12.2
Joliet, Ill.	15.4	3	18.4	19.4	13.3
Peoria, Ill.	15.2	3	18.2	19.2	13.1
Quincy, Ill.	15.2	3	18.2	19.2	12.9
Indianapolis, Ind.	15.2	4	19.2	17.9	14.2
Evansville, Ind.	15	4	19	20	14
South Bend, Ind.	15.4	4	19.4	20.4	14.4
Detroit, Mich.	13.8	3	16.8	14.3	14.7
Grand Rapids, Mich.	9.7	3	12.7	13.7	14.6
Saginaw, Mich.	15.9	3	18.9	16.9	14.8
Green Bay, Wisc.	15.6	2	17.6	18.6	13.4
Madison, Wisc.	15.3	2	17.3	18.3	13.1
Milwaukee, Wisc.	15.1	2	17.1	16	12.9
La Cross, Wisc.	16.2	2	17	18	14
Minneapolis, Minn.	14	3	19.2	20.2	13.9
Duluth, Minn.	16.5	3	19.5	20.5	13.9
Mankato, Minn.	16.1	3	19.1	20.1	13.7
Des Moines, Ia.	15.5	3	18.5	16.5	13.3
Davenport, Ia.	15.5	3	18.5	19.5	13.3
Sioux City, Ia.	15.1	3	18.1	19.1	12.9
Mason City, Ia.	15.5	3	18.5	19.5	13.3
St. Louis, Mo.	*14.9	2	16.9	17.9	12.3
Kansas City, Mo.	†12.9	2	14.9	15.9	11.6
St. Joseph, Mo.	†15.5	2	17.5	18.5	12.2
Fargo, N. D.	17.9	3	20.9	21.9	15.9
Grand Forks, N. D.	18.2	3	21.2	22.2	16.2
Minot, N. D.	17.9	3	20.9	21.9	15.9
Pierre, S. D.	16	4	20	21	14.4
Huron, S. D.	16.3	4	20.3	17.5	14.7
Wichita, Kans.	13.8	3	16.8	14.8	11.8
Bartlesville, Okla.	13.5	4	17.5	20.5	11.5

S. O. Indiana's quantity contract price schedule thru territory (except in Chicago and Detroit, which see below) on tank truck deliveries of gasoline, figured from the service station price is 3c for 500 gal. or more a month; and 4½c for 75,000 gals. or more a month.

In Chicago and vicinity, these discounts apply: Over 500 gals. per month, 4c per gal. off service station price; over 1,000 gals. per month, 5c per gal. off service station price.

In Detroit, dealers and consumers signing contract for all gasoline for one year, get 4c per gal. off s.s. price. Non-contracted accounts get 3c off s.s. price. Those buying 75,000 gals. or more a month, 4½c per gal. off s.s. price.

*Includes city tax of ½c.

†Includes city tax of 1c.

Above prices include these inspection fees on both gasoline and kerosine, per gallon: Alabama, 1/40c on gasoline, 1/2c kerosine; Arkansas, 1/20c on both; Florida, 1/8c on both; Illinois, 3/100c on both; Indiana, 4/25c to 1/2c on both; Kansas, 3/50c on both; Louisiana, 1/32c on gasoline; Minnesota, 3/50c on both; Missouri, 3/10c to 1/2c on both; Nebraska, 3/100c on both; North Carolina, 1/4c on both; North Dakota, 1/20c on both; Oklahoma, 4/25c on both; South Carolina, 1/8c on both, South Dakota, 1/10c on both; Tennessee, 2/5c on gasoline and 1/2c to 4/5c on kerosine; Wisconsin, 3/50c on both.

Kerosine inspection fees only, per gallon; Iowa 7/100c; Michigan 1/5c to 4/5c per gal.

Tank Wagon, Service Station Markets for Gasoline and Kerosine

Prices in Effect Sept. 22, 1930

S. O. OHIO

Ohio statewide	14	4	18	19	15
Montgomery, Preble and Richland Counties	14	4	18	18	15
Stark County	12	4	16	16	15
Summit County	10	4	14	14	15

Note: Discount on gasoline to dealers and commercial consumers generally thru Ohio is 2c per gal. off above t.w. prices. In counties where prices are below statewide schedule, discount is 3c per gal. off t.w. price.

Discount on kerosine to dealers and commercial consumers is 3c per gal. off t.w. price thru Ohio.

MAGNOLIA PETROLEUM

Muskogee, Okla.	12	4	16	19	9
Oklahoma City	11	4	15	18	10
Tulsa, Okla.	12	4	16	20	10
Fort Smith, Ark.†	8	†4	12	12	12
Little Rock, Ark.	12	5	17	15	12
Texarkana, Ark.*	13	4	17	17	12
Dallas, Tex.	10	4	14	17	12
Fort Worth, Tex.	10	4	14	17	11
Houston, Tex.	11	4	15	19	11
San Antonio, Tex.	9	4	13	17	11
El Paso, Tex.	12	4	16	20	13

*Within city of Texarkana, the state tax on gasoline is 4c per gal. conforming with the Texas state tax. In this district outside of the city the 5c Arkansas tax applies.

†Within city of Fort Smith, Oklahoma tax of 4c applies. In this district outside of the city, the 5c Arkansas tax applies.

S. O. NEW YORK

Due to local price conditions at many points in S. O. New York territory, actual prices on both gasoline and kerosene are being made at under the posted tank wagon prices published below.

Greater New York City: Boroughs of Manhattan, Bronx, Queens & Kings	12.3	2	14.3	16.3	10
Borough of Richmond	13.7	2	15.7	17.7	11.7
Albany, N. Y.	15.6	2	17.6	19.6	12.6
Buffalo, N. Y.	14.8	2	16.8	18.8	9
Rochester, N. Y.	15	2	17	19	9
Syracuse, N. Y.	15.8	2	17.8	19.8	12.8
Boston, Mass.	14.5	2	16.5	18.5	10
Augusta, Me.	15.8	4	19.8	21.8	12.8
Manchester, N. H.	15.4	4	19.4	21.4	12.4
Burlington, Vt.	16.3	4	20.3	22.3	13.3
New Haven, Conn.	15.6	2	17.6	19.6	12.6
Providence, R. I.	12.7	2	14.7	16.7	10

Note: S. O. New York allows 3c off t.w. price to dealers in New York City, and 2c off t.w. price thru rest of territory.

ATLANTIC REFINING

Pittsburgh, Pa.	16	*	16	21	13
Philadelphia, Pa.	16	*	16	21	13
Allentown, Pa.	16	*	16	21	13
Erie, Pa.	15	*	15	18	13
Scranton, Pa.	16	*	16	21	13
Altoona, Pa.	16	*	16	21	13
Dover, Del.	16	3	19	21	13
Wilmington, Del.	16	3	19	21	13
Boston, Mass.	14.5	2	16.5	18.5	11.5
Springfield, Mass.	15.5	2	17.5	19.5	12.5
Worcester, Mass.	15.3	2	17.3	19.3	12.3
Fall River, Mass.	14.1	2	16.1	17.1	12.1
Providence, R. I.	12.7	2	14.7	16.7	11.7
Hartford, Conn.	15.5	2	17.5	19.5	12.5
New Haven, Conn.	15.6	2	17.6	19.6	12.6
Atlantic City, N. J.	14.5	2	16.5	18.5	13.5
Camden, N. J.	13.6	2	15.6	17.6	12.6
Trenton, N. J.	14	2	16	18	13
Annapolis, Md.	14	4	18	20	13
Baltimore, Md.	13.2	4	17.2	19.2	10.5
Hagerstown, Md.	14.7	4	18.7	20.7	13.7
Richmond, Va.	13.7	5	18.7	20.7	12.7
Wilmington, N. C.	13.4	5	18.4	20.4	12.4
Brunswick, Ga.	15	6	21	23	**15
Jacksonville, Fla.	13	6	19	21	14

Note: 2c per gal. discount off t.w. price of gasoline on sales to dealers; discount to commercial accounts under contract for one year in accordance with Code of Ethics. Erie has dealer discount of 4c off t.w. price, effective May 28.

*3-cent state tax is collected by retail dealer and paid by him directly to state.

**Georgia kerosine prices include 1c state tax.

V. M. & P. NAPHTHA

(Changes ordinarily occur coincident with gasoline price changes)

	Oleum Sprits	V.M.&P. Naphtha	Cleaner Naphtha
Chicago	14.7	16.7	17
Detroit	17.4	18.9	20.7
Kansas City	†15.9	†17.4	†19.2
Milwaukee	16.4	*19.9	*21.7
Minneapolis	**20.7	**22.2	**24
St. Louis	13.9	17.1	18.9
New York		16	23
Boston		19	23

*Includes 2c state tax. †Includes 1c city tax.
**Includes 3c state tax.

Petroleum Spirits (Solvent)

Tank Cars (F.o.b. refinery or seaboard terminal)

New York harbor	11.00
Philadelphia district	11.00
Providence	11.50

Tank Wagon or Steel Barrels

New York City	15–16
Syracuse	17–18
Rochester	18
Buffalo	17–18
Providence	18–19
Boston	19
Bridgeport	16–18
Newark	16–18
Philadelphia	16–17
Baltimore	18

Note: 2c off above t.w. prices to large buyers in some instances.

CANADA

(Per Imperial Gallon, which is 1.2 American Gallons)

ONTARIO	Gasoline T.W.	Tax	Gasoline Total T.W.	Oil S.S.	Oil T.W.
Toronto	19.5	5	24.5	28	20.5
Ottawa	19.5	5	24.5	28	20.5
North Bay	22.5	5	27.5	33	27
Ft. William	22.5	5	27.5	31	22.5
Border Cities, including Windsor	18.5	5	23.5	27	19.5
MANITOBA					
Winnipeg	21	5	26	30	21.5
SASKATCHEWAN					
Regina	26	5	31	35	26
ALBERTA					
Edmonton	27.5	5	32.5	36	27.5
Calgary	23.5	5	28.5	32	23.5
BRITISH COLUMBIA					
Vancouver	23	5	28	32	24
QUEBEC					
Montreal	20.5	5	25.5	29	21.5
Quebec City	21.5	5	26.5	30	22.5
Three Rivers	21.5	5	26.5	30	22.5
NEW BRUNSWICK					
St. John	20	5	25	29	22
Moncton	20	5	25	29	22
NOVA SCOTIA					
Halifax	20	5	25	29	22
PRINCE EDWARD ISLAND					
Charlottetown	20	5	25	29	22

Note: In districts surrounding these points 1c additional is added to city price.

Aviation Gasoline Prices

Following are tank wagon prices of aviation gasoline in principal marketing territories showing state and municipal taxes:

S. O. NEW JERSEY

Prices in Effect Sept. 22, 1930

	T.W.	Tax	Total
Newark, N. J.	17.4	*	17.4
Baltimore, Md.	16.2	4	20.2
Washington, D. C.†	18.5	2	20 5

*New Jersey road tax of 2c does not apply on aviation gasoline, exemption being claimed at time of purchase.

†Price at Washington is on Stanavo Aviation gasoline which sells at a 2c premium over "Standard" aviation gasoline.

(*Continued on Page 237*)

ECONOMY
APPEARANCE
DURABILITY
STRENGTH
are built into

MARION STEEL BUILDINGS

Write for Bulletin 282

Marion Machine, Foundry & Supply Co.
MARION, IND.

PIPE BENDS
WELDED HEADERS
CAST STEEL FITTINGS
COMPLETE PIPING

LIMBERT PIPING

We manufacture ordinary requirements or design and manufacture special piping for any refinery condition. A third of a century of piping leadership.

GEO. B. LIMBERT CO.
570 Fulton Street, Chicago, Ill.
St. Louis Kansas City, Mo.
Detroit, Mich.

Less Vibration automatically takes up wear delivers a uniform flow

Because of the helical gear construction, shock and vibration are largely eliminated in Perfection Rotary Pumps, and wear is automatically taken up. Perfection Rotary Pumps run smoothly and deliver a uniform flow of oil or gas.

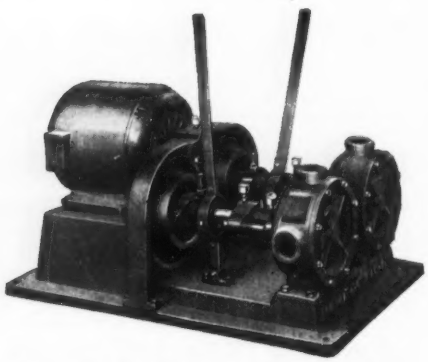
Because of the angle of the teeth of the helical gear rotor in the Perfection Rotary Pump, these teeth (or vanes) strike the liquid at the ports with a shearing cut instead of splashing head on.

The liquid being forced through the pump tends to push the rotor back from the head plate. The end thrust produced by the helical gears tends to force the rotor in the opposite direction (against the head plate.) This balancing of forces eliminates wear to a considerable degree and automatically takes up wear.

A uniform flow is obtained because the intermeshing teeth of the idler gear and the rotor work like a series of rotating pistons and cylinders. A non-fluctuating load saves the motor.

There are only two moving parts in the Perfection Rotary Pump—the helical gear rotor and the helical idler gear.

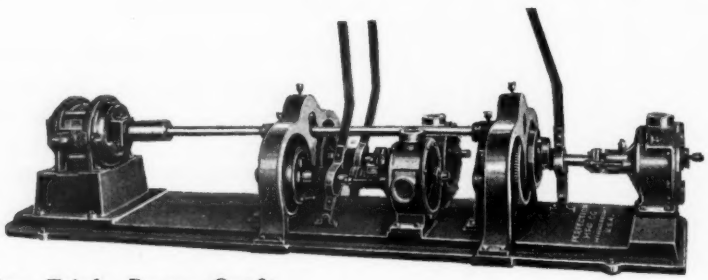
Write today for complete information



Type No. 6. Perfection Motor Driven Twin Pump Outfit

See Our Exhibit at International Petroleum Exposition, Tulsa, Oklahoma, Oct. 4th to 11th.

Perfection Manufacturing Company
2194 East Hennepin Avenue, Minneapolis, Minn.



Type No. 18. Perfection Triple Pump Outfit. Motor Drive, With Space for Fire Wall. A fourth pump can be added.

PERFECTION ROTARY PUMP

Crude Oil Prices (in Effect Sept. 22, 1930)

(Crude prices for the whole year in OIL PRICE HANDBOOK published annually)

EASTERN FIELDS

(Posted by Joseph Seep Purchasing Agency)

Bradford—Alleghany district (posted by Tide Water Pipe Co., Ltd.) (Effective Sept. 18, 1930) 2.55

Penna. Grade Oil in National Transit Lines (Other Pennsylvania) (Effective Aug. 22, 1930) *2.30

Penna. Grade Oil in Southwest Penna. Pipe Lines (Other Pennsylvania) (Effective Aug. 22, 1930) 2.25

Penna. Grade Oil in Eureka Pipe Lines (West Virginia) (Effective Aug. 22, 1930) 2.15

Penna. Grade Oil in Buckeye Pipe Lines (Macksburg, O.) (Effective Sept. 13, 1930) 1.90

Wayne district crude in Cumberland lines (West Virginia) (Effective July 23, 1930) 1.17

Corning Grade in Buckeye Pipe Lines (Ohio) (Effective July 19, 1930) 1.50

Somerset Oil in Cumberland Pipe Lines (Kentucky) (Effective July 23, 1930) 1.30

Somerset Oil in Eureka Pipe Lines (Effective July 23, 1930) 1.14

Ragland Grade in Cumberland Pipe Lines (Kentucky) (Effective Jan. 29, 1929) $0.60

*Oil run prior to July 1, 1929 is $2.25 per bbl.

(Posted by Stoll Oil Refining Co.)

Oil City, Ky., oil in Stoll lines (Effective July 25, 1930) $1.35

MICHIGAN

(Posted by Dixie Oil Co.)

Traverse and Dundee (Muskegon), effective April 16, 1930, same gravity and price schedule as Prairie posts in Oklahoma and Kansas, which see below.

(Posted by Pure Oil Co.)

Midland, Midland County (Aug. 21, 1930) $1.30

CENTRAL STATES FIELDS

Posted by Ohio Oil Co.

Wooster	$1.70	Princeton	$1.65
Lima	1.55	Illinois	1.65
Waterloo	1.20	Plymouth	1.23
Indiana	1.32	West Kentucky	1.55

CANADIAN CRUDE

Posted by Imperial Oil Refineries, Ltd.

Petrolia	$1.95
Oil Springs	2.02

OKLAHOMA, KANSAS and NORTH TEXAS

Prices of Prairie Oil & Gas Co.

(In Oklahoma and Kansas)

Effective Apr. 10, 1930

Below 25	$0.75	35-35.9	$1.255
25-25.9	0.80	36-36.9	1.29
26-26.9	0.85	37-37.9	1.325
27-27.9	0.90	38-38.9	1.36
28-28.9	0.95	39-39.9	1.395
29-29.9	1.00	40-40.9	1.43
30-30.9	1.05	41-41.9	1.465
31-31.9	1.10	42-42.9	1.50
32-32.9	1.15	43-43.9	1.535
33-33.9	1.185	44 and above	1.57
34-34.9	1.22		

(In North Texas: Ranger, Wichita Falls, Mexia)

Effective Apr. 10, 1930

Below 25	$0.72	30-30.9	$1.02
25-25.9	0.77	31-31.9	1.07
26-26.9	0.82	32-32.9	1.12
27-27.9	0.87	33-33.9	1.17
28-28.9	0.92	34-34.9	1.22
29-29.9	0.97	35-35.9	1.255
36-36.9	$1.29	41-41.9	$1.465
37-37.9	1.325	42-42.9	1.50
38-38.9	1.36	43-43.9	1.535
39-39.9	1.395	44 and above	1.57
40-40.9	1.43		

The Texas Co., same schedule in Oklahoma as Prairie in Oklahoma; and in North Texas, North Central Texas and Central Texas same as Prairie and Humble in North Texas, effective Apr. 10.

Humble Oil & Refining Co. Prices

(Ranger, North Texas, Mexia, Powell, Boggy Creek, Richland, Wortham, Lytton Springs, Currie, Moran and Nocona crudes all in Texas.)

Humble's prices in above fields same as Prairie's prices in North Texas, effective Apr. 10, which see.

Magnolia Petroleum Co.

(In Oklahoma, Kansas and North and East Central Texas)

Below 26	$0.70	28-28.9	$0.88
26-26.9	0.76	29-29.9	0.95
27-27.9	0.82	30-30.9	1.02

Rest of Magnolia schedule up to 44 and above same as Prairie in Oklahoma and Kansas.

Apr. 10, 1930, Glasscock, Crane, Upton, Winkler, Howard and Mitchell Counties same prices as Humble's postings in Winkler, Crane, etc., which see

Corsicana heavy	$0.80
Luling	0.85
Mirando	0.85
Darst Creek, 60° F. gravity	1.15

Carter Oil Co.

(Oklahoma and Kansas)

Apr. 10, 1930, same schedule as Prairie, which see.

PANHANDLE TEXAS

Humble Oil & Refining Co.

Effective Apr. 10, 1930

Hutchinson and Carson Counties:

Below 32	$0.775	38-38.9	$1.065
32-32.9	0.825	39-39.9	1.10
33-33.9	0.875	40-40.9	1.135
34-34.9	0.925	41-41.9	1.17
35-35.9	0.96	42-42.9	1.205
36-36.9	0.995	43-43.9	1.24
37-37.9	1.03	44 and above	1.275

Gray County:

Below 29	$0.755	37-37.9	$1.16
29-29.9	0.805	38-38.9	1.195
30-30.9	0.855	39-39.9	1.23
31-31.9	0.905	40-40.9	1.265
32-32.9	0.955	41-41.9	1.30
33-33.9	1.005	42-42.9	1.335
34-34.9	1.055	43-43.9	1.37
35-35.9	1.09	44 and above	1.405
36-36.9	1.125		

Wheeler County: Posted by Magnolia Pet. Co. Humble withdrew Wheeler county postings Apr. 10.

Below 30	$0.755	37-37.9	$1.11
30-30.9	0.805	38-38.9	1.145
31-31.9	0.855	39-39.9	1.18
32-32.9	0.905	40-40.9	1.215
33-33.9	0.955	41-41.9	1.25
34-34.9	1.005	42-42.9	1.285
35-35.9	1.04	43-43.9	1.32
36-36.9	1.075	44 and above	1.355

Above prices met by The Texas Co. and Magnolia on Apr. 10.

WEST TEXAS AND NEW MEXICO

Humble Oil & Refining Co.

Effective Apr. 10, 1930

Winkler, Crane, Upton, Crockett, Ector, and Pecos Counties, also Lea County, N. Mex.

Below 25	$0.65	31-31.9	$0.86
25-25.9	0.68	32-32.9	0.89
26-26.9	0.71	33-33.9	0.92
27-27.9	0.74	34-34.9	0.95
28-28.9	0.77	35-35.9	0.98
29-29.9	0.80	36 and above	1.01
30-30.9	0.83		

Howard and Glasscock counties:

Effective Apr. 10, 1930

Below 25	$0.65	31-31.9	$0.82
25-25.9	0.68	32-32.9	0.84
26-26.9	0.71	33-33.9	0.86
27-27.9	0.74	34-34.9	0.88
28-28.9	0.76	35-35.9	0.90
29-29.9	0.78	36 and above	0.92
30-30.9	0.80		

Apr. 10, 1930, The Texas Co. posted same prices in Crane, Upton, Winkler and Lea counties as Humble.

SOUTH AND SOUTHWEST TEXAS

(Posted by Humble Oil & Refining Co.)

Effective Apr. 10, 1930

Mirando	$0.85
Salt Flat	1.15
Darst Creek	1.15
Pettus, Bee County (Effective Aug. 21)	1.15

NORTH LOUISIANA—ARKANSAS FIELDS

Prices of Standard Oil Co. of Louisiana

Caddo, Homer, Haynesville, Bull Bayou, El Dorado, Crichton, De Soto, and Sabine.

Effective Apr. 11, 1930

Below 28	$0.87	36-36.9	$1.29
28-28.9	0.92	37-37.9	1.325
29-29.9	0.97	38-38.9	1.36
30-30.9	1.02	39-39.9	1.395
31-31.9	1.07	40-40.9	1.43
32-32.9	1.12	41-41.9	1.465
33-33.9	1.17	42-42.9	1.50
34-34.9	1.22	43-43.9	1.535
35-35.9	1.255	44 and above	1.57

Cotton Valley, Sarepta and Carterville below 36 gravity, $0.85. Rest of schedule same as Caddo, Homer, etc.

Smackover, below 24	$0.90
do 24 and above	1.05
Bellevue (Apr. 11, 1930)	1.15
*Urania, La. (Apr. 11, 1930)	0.95
†East El Dorado (Calion) (Apr. 11, 1930)	0.90

*Posted by Louisiana Oil Refining Corp.

†Posted by Magnolia Petroleum Co.

Apr. 10, 1930, The Texas Co. same schedule in Louisiana as Standard, plus these grades: 24-24.9, $0.67; 25-25.9, $0.72; 26-26.9, $0.77; 27-27.9, $0.82.

Apr. 11, Magnolia met Standard schedule in Louisiana-Arkansas fields.

STEPHENS, ARKANSAS

Louisiana Oil Refining Corp., and Atlantic Oil Producing Co.

Effective Apr. 11, 1930

Below 28	$0.76	30-30.9	$0.91
28-28.9	0.81	31-31.9	0.96
29-29.9	0.86	32 and above	1.01

GULF COASTAL

Posted by Humble Oil & Refining Co.

Effective Apr. 10, 1930

Grades A	$1.15	34-34.9	$1.30
Grades B:		35-35.9	1.33
Below 25	1.00	36-36.9	1.36
25-25.9	1.03	37-37.9	1.39
26-26.9	1.06	38-38.9	1.42
27-27.9	1.09	39-39.9	1.44
28-28.9	1.12	40-40.9	1.46
29-29.9	1.15	41-41.9	1.48
30-30.9	1.18	42-42.9	1.50
31-31.9	1.21	43-43.9	1.52
32-32.9	1.24	44 and above	1.54
33-33.9	1.27		
Refugio county		(rest of schedule, same as Grades B, which see above).	
Below 25	$0.85		
25-25.9	1.03		

Fields classified as A and B are Spindletop, Goose Creek, Hull, Liberty, Sour Lake, West Columbia, Orange, Boling, Humble, Pierce Junction, Sugarland and Raccoon Bend. All other fields are Grades A only.

Specifications for Grade "A" crude: Gravity: 25° and below, at 60° F; Viscosity: not less than 100 seconds at 100° F. Saybolt.

Sulfur: not over .4%.

Grade "B" includes all Coastal crude which does not meet the test for "A" grades.

Crude Price Changes

BRADFORD, Pa.—On Sept. 18, Tide Water Pipe Co., Ltd., advanced Bradford-Allegany district crudes 5 cents, making new price $2.55 per barrel at wells.

* * *

LOS ANGELES—On Sept. 15 the Union Oil Co. of California met the reduction on California crude posted by the Standard Oil Co. of California, in fields where it purchases. The Union company also reduced Orcutt crude in the Santa Maria field and Santa Paula in Ventura field in amounts ranging from 1 to 12 cents and on grades beginning with 24-24.9 gravity. Grades below 24 gravity were unchanged.

Virginia Calls October Meeting

RICHMOND, Va., Sept. 20.—The Virginia Oil Men's Association will hold its fall meeting on Oct. 16 and 17 at Charlottesville, Va. A meeting of the code of ethics sub-committee of Virginia will be held the morning of Oct. 17.

Seismograph Patent Upheld

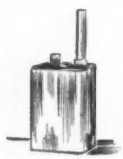
LONDON, Sept. 2.—The German Reich Court has handed down an opinion upholding the validity of the Mintrop patent covering the use of the seismograph for geological exploration. The Reich court decision was a reversal of an action of the German patent office. The seismograph has been used for exploration of more than 191,000 kilometers in more than 12 nations.

Who Was the First to Make Visible Oil Dispensers?

Here's the Story

BACK in 1921, Jay B. Rhodes, at that time owner and operator of a service station in Kalamazoo, Mich., was using the can and funnel to dispense oil, like everybody else did in those days. But it occurred to 'Jay B.' that there was room for improvement—that it would save time and make his customers happier if he had the oil all ready in pre-filled containers.

He fastened metal spouts to several quart tin cans and kept them filled—ready to use—near his gas pumps. The cans were fitted with air vents to speed up delivery and customers were pleased with this faster service. He sold more oil this way—he had hit upon a good merchandising idea.



'Jay B.' then began a series of improvements. First he accomplished 'visibility' by soldering spouts in caps of fruit jars. He improved this idea to the extent of obtaining patents on the spout and air vent in 1922.

His next improvement was to have special annealed glass jars made with a line to mark the filling point which was approved by Sealers of Weights and Measures. The full measure and visible features made 'Jay B.'s dispensers extremely popular with the motorist. Other oil marketers saw the advantages to be had and 'Jay B.' soon developed a fine business in addition to his oil business.

The Jay B. Rhodes Co. was formed to manufacture visible oil dispensers and as time went on improvements in design have been made. Today, these dispensers are being used the world over.

Today, Jay B. Rhodes Co., originators of visible oil dispensers, offer the most improved and modern equipment designed to dispense motor oil quickly and safely and to meet the needs of modern merchandising.

The Finger Tip Groove, the scientifically tapered bottle, the re-enforced turned-in spout end, the lock seamed dome and spout (no solder used), the improved vent—are all new features of the 1930 line.

Complete visible dispenser equipment bottles—spouts — gaskets — caps — baskets — display stands—or complete sets.

Write for prices and further information.

Jay B. Rhodes Company

originators of visible oil dispensers

TULSA OKLAHOMA — Kalamazoo, Mich. — LONDON ONTARIO

At Booth 50, California Bldg., Tulsa Exposition you will see latest developments in Visible Oil Dispensers

Crude Oil Prices (in Effect Sept. 22, 1930)

(Prices are per barrel at the well)

(Crude Oil Prices for the whole year in OIL PRICE HANDBOOK published annually)

GULF COASTAL

Prices of The Texas Co.

Effective Apr. 10, 1930

Grades A.....$1.15 *Grades B.....$1.00

*Grades B include all heavy crudes which do not meet tests for Grades A or for Grades B light crude. Prices for Grades B light crude are the same as Humble's, which see.

ROCKY MOUNTAIN FIELDS

Prices of Ohio Oil Co., and Midwest Refining Co.

(Salt Creek prices effective Apr. 10, 1930)

‡Salt Creek 29-29.9	$1.00
" " 30-30.9	1.05
" " 31-31 9	1.10
" " 32-32.9	1.15
" " 33-33.9	1.185
" " 34-34.9	1.22
" " 35-35.9	1.255
" " 36-36.9	1.29
" " 37 and above	1.325
Elk Basin	1.55
Grass Creek light	$1.55
Big Muddy	1.38
Lance Creek	1.63
Rock Creek	1.35
Mule Creek	1.20
Rex Lake	1.10
‡Osage	1.63
‡Cat Creek, Mont.	1.55
Sunburst, Mont.	1.65
‡Hogback, N. Mex.	1.40
Artesia, N. Mex.	1.05

‡Posted by Midwest Refining Co. Midwest also buys Grass Creek light and Elk Basin.

CALIFORNIA

Standard Oil Co. of California

(Effective Sept. 15, 1930)

Gravity	Signal Hill Seal Beach Alamitos Heights Huntington Beach Inglewood* Olinda-Brea Canon*	Athens Rosecrans Dominguez	Elwood Terrace	Torrance Richfield	Whittier La Habra	Montebello	Coyote	Santa Fe Springs	Newhall McKittrick Kern River	Midway-Sunset Elk Hills Buena Vista Hills Lost Hills	Coalinga	Wheeler Ridge	Kettleman Hills	Orcutt (Santa Maria) (Union Oil Co.)	Santa Paula (Ventura) (Union Oil Co.)	Ventura Avenue (Associated Oil Co.)
14–14.9**	$0.70	....	....	$0.70	$0.70	$0.70	$0.70	....	$0.55	$0.55	$0.55	$0.55	....	$0.55	$0.70	$0.70
15–15.9	.70	....		.70	.70	.70	.70	....	.55	.55	.55	.55		.55	.70	.70
16–16.9	.70	....		.70	.70	.70	.70	....	.55	.55	.55	.55	$1.65	.55	.70	.70
17–17.9	.70	....		.70	.70	.70	.70	....	.55	.55	.55	.55	for	.55	.70	.70
18–18.9	.76	....		.76	.76	.71	.76	....	.55	.62	.62	.62	55°	.65	.75	.76
19–19.9	.82	....		.82	.82	.77	.82	....	.55	.70	.70	.70	gravity	.70	.80	.82
20–20.9	.88	....	F.o.b. ships	.88	.87	.83	.87	....	....	.78	.78	.78	and	.78	.85	.88
21–21.9	.94	....		.94	.93	.90	.93	$0.92	....	.86	.86	.86	over	.90	.90	.91
22–22.9	1.00	....	....	1.00	.98	.97	.98	.95	....	.94	.94	.94	....	.95	.97	.94
23–23.9	1.07	....	....	1.07	....	1.05	1.04	1.01	....	1.02	1.02	1.02	....	1.02	1.05	1.00
24–24.9	1.12	1.12	....	1.12	....	1.08	1.08	1.05	....	1.06	1.04	1.04	....	1.08	1.07	1.07
25–25.9	1.17	1.17	....	1.17	....	1.11	1.12	1.09	....	1.10	1.06	1.06	....	1.11	1.09	1.14
26–26.9	1.22	1.22	....	1.22	....	1.15	1.16	1.13	....	1.14	1.08	1.08	....	1.15	1.12	1.21
27–27.9	1.26	1.27	....	1.26	....	1.19	1.21	1.18	....	1.18	1.11	1.10	....	....	1.16	1.28
28–28.9	1.30	1.32	....	1.30	....	1.23	1.25	1.23	....	1.23	1.15	....	....	....	1.20	1.35
29–29.9	1.34	1.37	....	†1.34	....	1.26	1.29	1.28	....	1.29	1.19	....	....	....	1.24	1.39
30–30.9	1.38	1.42	....	†1.38	....	1.29	1.33	1.33	....	1.35	1.23	....	....	....	1.29	1.43
31–31.9	1.43	1.47	....	....	....	....	....	1.38	....	1.41	1.27	....	....	....	1.34	1.48
32–32.9	1.48	1.52	....	....	....	....	....	1.43	....	1.47	1.31	....	....	....	1.40	1.53
33–33.9	....	1.57	....	....	....	....	....	1.48	....	1.53	1.35	....	....	....	1.46	1.59
34–34.9	....	1.62	1.32	....	....	....	....	1.53	....	††1.59	1.39	....	....	....	....	1.65
35–35.9	....	1.66	1.39	....	....	....	....	1.58	....	††1.65	1.43	....	....	....	....	1.71
36–36.9	....	1.72	1.46	....	....	....	....	1.63	....	....	....	....	....	....	....	....
37–37.9	....	1.78	1.53	....	....	....	....	1.68	....	....	....	....	....	....	....	....
38–38.9	....	1.84	1.60	....	....	....	....	1.73	....	....	....	....	....	....	....	....
39–39.9	....	1.90	1.66	....	....	....	....	1.78	....	....	....	....	....	....	....	....
40–40.9	....	1.96	1.72	....	....	....	....	....	....	....	....	....	....	....	....	....
41–41.9	....	2.02	1.78	....	....	....	....	....	....	....	....	....	....	....	....	....
42–42.9	....	2.08	1.84	....	....	....	....	....	....	....	....	....	....	....	....	....

*Inglewood prices run only to 28.9 gravity; Olinda-Brea Canon to 31.9 gravity.
†Richfield crude only. ††These two grades apply on Lost Hills only.
**Standard does not contract for crude testing below 14 gravity, but pays 45c per barrel when purchased.

REFINERS' and COMPOUNDERS' SUPPLIES

Following are average market prices for materials used by refiners and compounders effective on the date shown.

Refiners' Supplies

	Sept. 22	Sept. 15
Soda Ash light 58% bags, cwt.	$1.32	$1.32
Silicate of Soda 60 deg. drums, cwt.	$1.55	$1.55
Silicate of Soda 40 deg. tank cars, cwt.	$0.60	$0.60
Silicate of Soda 40 deg. drums cwt.	$0.80	$0.80
Sal Soda wks.	$1.00-1.05	$1.00-1.05
Caustic Soda 76% solid, cwt.	$2.90	$2.90
Sulfuric Acid 60 deg. tank cars, f. o. b. shipping point per ton	$11.00	$11.00
Oleum 20%, fuming sulfuric, tank cars, wks.	$18.50	$18.50
Sulfur, flowers of, cwt.	$3.10-4.00	$3.10-4.00
Liquid Chlorine, tank cars, wks., lb.	2.40-2.45	2.40-2.45

Compounders' Supplies

	Sept. 22	Sept. 15
Vegetable Oils		
Linseed carloads, spot, lb.	12.50	12.50
Tanks, spot	11.80	11.80
Soya Bean, Tank, coast, lb.	9.50	9.50
Oleic Acid		
Distilled, tanks, lb.	8.25	8.25
Distilled, bbls., lb.	9.125	9.125
Saponified, tanks, lb.	8.50	8.50
Saponified, bbls., lb.	9.375	9.375
Lard Oils		
Prime Winter Strained, lb.	12.75	12.75
Extra Winter Strained, lb.	10.25	10.25
Extra, lb.	10.00	10.00
Extra No. 1, lb.	9.75	9.75
No. 1, lb.	9.50	9.50
No. 2, lb.	9.25	9.25
Tallow oil, lb.	9.25	9.25
Neatsfoot Oil		
Pure, bbls., lb.	12.125	12.125
Extra, bbls., lb.	10.00	10.00
No. 1 bbls., lb.	9.75	9.75
Cold Pressed, lb.	17.00	17.00
Fish Oils		
Menhaden Oil		
Light Pressed, gal.	48–50	48–50
Light Pressed, tank cars, N. Y., gal.	42–44	42–44
White bleached, gal.	58–60	58–60
Yellow bleached, gal.	51–53	51–53
Whale, extra winter bleached, gal.	85	85
Naval Stores		
Steam, distilled turpentine, N. Y., gal.	40	40
Steam distilled turpentine, Savannah, gal.	37	37
Gum turpentine, N. Y., gal.	45	45
Gum turpentine, f.o.b. cars Savannah, gal.	38.75	38.75
Wood Rosin, N. Y., gal.	$5.16	$5.16
Wood Rosin F, Savn'h, bbl.	$4.40	$4.40
Gum Rosin B, N. Y. bbl.	$5.90	$5.90
Gum Rosin B, f. o. b. cars Savannah, bbl.	$4.65	$4.65
Rosin oil, pure, gal.	57	57
Rosin oil, compounded, gal.	50	50
Pine Tar		
Kiln burnt, bbl.	$13.00-14.00	$13.00-14.00
Retort, bbl.	$13.50-14.50	$13.50-14.50
Alcohol		
Denatured Formula 5, in bbls., per gal.	46–48	46–48

"Gas" on Consignment Eliminates "Dry" Roadside Stations

By E. L. Barringer
N. P. N. STAFF WRITER

FORT WAYNE, Ind.

"GIVE me 20 gallons of Ethyl," said the customer at a roadside filling station in southern Indiana.

"We got only those six gallons up there in the bowl," replied the woman attendant.

"Just what I thought," shot back the customer. "Here I go to all the trouble to turn in on your inconvenient drive, coming along at a fast clip, and you are practically out of gasoline. I'll bet the next stand down this road is out too (and it was the attendant admitted, and had been for several days)."

Growling of gears indicates another irritated customer pulling out of a roadside station without gasoline, peeved at himself also for creating a scene when he wanted water for his radiator more than he wanted gasoline.

It happens that the customer was T. J. O'Day, from Fort Wayne, Ind., the O'Day of many years service with the Standard Oil Co. of Indiana at South Bend, and the O'Day who began operating the O'Day Oil Co. about 12 years ago.

As an oil jobber this customer looked on both sides of the question. It was not the first time he has found roadside stations out of gasoline, but he has applied a remedy to prevent his own roadside dealers from being in the same predicament.

From the customer's viewpoint Mr. O'Day believes the roadside station, out of gasoline, gives the oil company a "black eye." After the customer encounters a few of these stations he will be wary of all pumps displayed by that company, and all the fine advertising, road signs, and elaborate city stations will suffer along with the roadside stand.

From the jobber's viewpoint he believes these stations represent a problem in costs. The roadside stand, unable to buy regular fills, takes small dumps and is apt to call for a delivery on Sunday or a holiday, thus putting up the jobber's trucking costs unnecessarily.

To overcome such a situation the O'Day Oil Co. puts out gasoline on consignment to this class of roadside dealers. The plan has worked to the satisfaction of the roadside operator as well as the jobber in this instance.

A report of sales and inventory is made out by the roadside operator, assisted by the truck driver, each time a dump is made; same report as the company's own service stations make. At each visit the truck driver collects the full tankwagon price, which is 1 cent below service station in Fort Wayne, for the difference between the gasoline in the tank at the end of the previous visit and the beginning of the present one. At the end of the month the company mails the operator a check for the balance of his discount.

The arrangement provides sufficient gasoline at the roadside station at all times, so the customer never stops at an O'Day pump, only to find there is no goods to sell.

The oil company has received the full tankwagon price for its goods, and the dealer has the 1 cent margin on each gallon, which he gets at the time of the sale. Mr. O'Day finds that monthly checks look big to the dealer; in fact, bigger than if the entire discount was given at the time of payment for the gasoline. The truck driver, also, has only the one price to use in collecting, and the bookkeeping on the various discounts is confined to the home office.

To reduce delivery costs was one reason for the system, and it has eliminated unnecessary small dumps as the truck driver knows when the roadside operators are low, and routes his truck to the station to make sizable deliveries as the gasoline is needed.

To protect the company against losses of gasoline in the dealer's tanks the O'Day Oil Co. includes this goods in its blanket bond. Each year the bond is taken out to cover the property of the company, and the office assigns a definite portion to its various operations, as company owned, leased, or dealer stations.

New State Code Heads Named by A. P. I.

NEW YORK, Sept. 20.—Changes in the personnel of code committees in seven states have been announced by the American Petroleum Institute. Following are the changes:

Wiley Moore of the Wofford Oil Co., Atlanta, has been made chairman of the Georgia committee.

B. E. Holman, Elk Oil Co., Fayetteville, Tenn., is new chairman in that state, succeeding Mark H. Senter, resigned.

Walter H. Goodrich of Walter H. Goodrich & Co., Inc., New Haven, now heads the Connecticut committee, succeeding Frederick B. Hale of the Colonial Beacon Oil Co., Everett, Mass. J. L. Silva of the Colonial Beacon at Hartford has been made a new member of the committee. N. C. Dodge, New Haven, of the Cities Service Oil Co., is vice-chairman.

George H. Goohs, Standard Oil Co. of Indiana, Cheyenne, has been appointed chairman of the Wyoming committee to succeed L. A. Miller of the Chief Oil Co., who resigned to run for governor.

J. A. Welch, Louisiana Oil Refining Corp., Little Rock, is new chairman in Arkansas.

J. J. Foley, Continental Oil Co., Albuquerque, heads the New Mexico committee since the resignation of H. W. McCallum of the Standard Oil Co. of California.

Absolute Burglar Protection

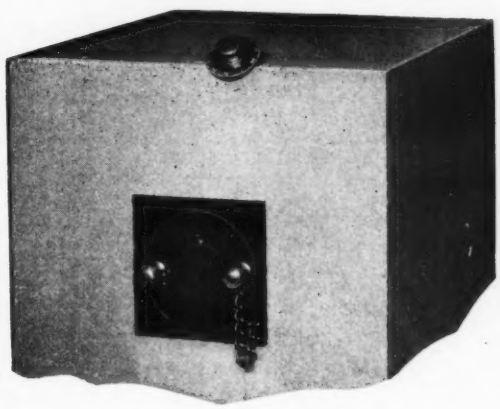
At Low Cost

SPECIAL "NATIONAL" CHESTS

ONLY $37.50 Each

Discounts in Quantities
Express prepaid anywhere in U. S. A.

Ready to install in concrete block. Complete drawing and specification furnished for easy installation



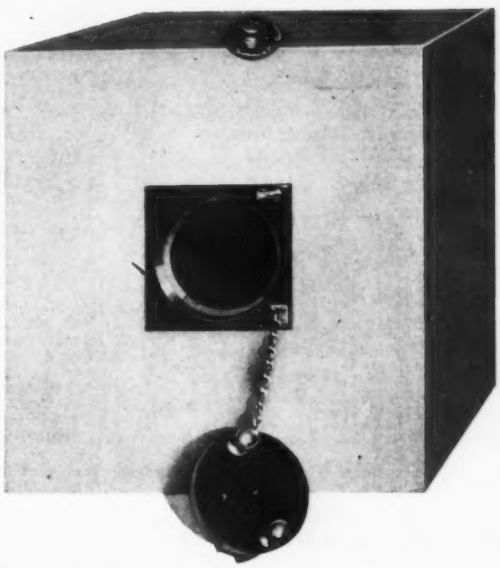
Already installed by THE STANDARD OIL CO. OF INDIANA in nearly a Thousand of their Stations in Chicago, Milwaukee, Kansas City, St. Louis and Indianapolis.

Months were spent designing this chest to not only withstand any form of attack but to make repair cost after attack trivial. Before purchasing these chests The Standard Oil Co. submitted it to every form of destructive test in their laboratories. Numberless attacks have already been successfully resisted since installation.

Order Now With Confidence

Our Blanket GUARANTEE of Satisfaction

Every National product embodies the highest type construction and workmanship and we unhesitatingly accept orders with the understanding that if for any reason they do not please the purchaser in every way they may be returned with full credit and all expense to be paid by us.



Views of chest installed in concrete block, showing door closed with dial removed, and chest open ready for use.

Read These 6 Features Then Act

1. Absolute protection at small cost.
2. Removable dial discourages sledging.
3. Yale lock with special graduated spindle flush with door.
4. Immediate access after attack without services of expert.
5. Repair parts at trivial cost.
6. Eliminates the necessity of high priced insurance.

ESTABLISHED 1883—47 YEARS AGO

THE NATIONAL SAFE AND LOCK COMPANY

GENERAL OFFICES—2345 EAST 69th STREET
WORKS—EAST 69th to 70th ST. AND PENNSYLVANIA R. R.

CLEVELAND, U. S. A.

Mail Today

Check Service Desired

THE NATIONAL SAFE & LOCK CO.
2349 East 69th St., Cleveland, Ohio

☐ Enclosed pleased find my check for.....National Chests. It is understood that if they do not satisfy for any reason they may be returned with full credit.

☐ Please send me further information on the protection offered by National Chests.

Name.....

Address.....

City..... State.....

Transactions in Oil Shares on New York Stock Exchange

1929 High	1929 Low	1930 High	1930 Low	Listed Shares	Par Value	Company	Div. Rate	Last Paid	Transactions Week Ending Sept. 20 Sales	First	High	Low	Last	Change
42⅝	17½	42¼	20½	922,075	N.P.	Amerada Corp.	50cQ	July 31, 30	7,900	24	24¾	22½	22½	— 1
64¾	12½	37	15¼	209,180	N.P.	American Republics Corp.	....	.....	400	16⅝	16⅞	15⅝	15⅝	— 1⅞
47¼	34½	51	32½	2,240,000	$25	Associated Oil	50cQ	June 30, 30	.....	....	....	....	....	.....
77⅞	30	51⅜	30⅛	2,683,868	25	Atlantic Refining Co.	‡25cQ	June 16, 30	21,200	34	34	32	32	— 2
49⅛	20	34	20½	2,257,108	25	Barnsdall Corp. A	50cQ	Aug. 6, 30	6,900	22⅜	22½	21½	21¾	— ¾
34½	25	35	28	2,060,966	25	California Petroleum Corp.	....	Jan. 1, 29	.....	....	....	....	....	.....
32⅞	12½	20⅝	12¼	1,444,970	N.P.	Colonial Beacon Oil Co.	....	.....	2,000	14⅛	14⅛	14	14	— ⅛
37⅝	18	30½	18¼	4,610,258	N.P.	Continental Oil (Delaware)	....	.....	6,700	19¼	19¼	†18¼	18¼	— 1⅛
94⅝	42¼	71⅜	38¾	410,857	$100	General Asphalt Co.	$1Q	June 16, 30	700	42	42¾	41⅝	42	0
109	26	116⅞	52¼	250,000	100	Houston Oil	.....	.....	20,600	76	76	70¾	71⅞	— 4⅛
39⅜	17¾	32	19⅜	1,379,295	N.P.	Independent Oil & Gas	50cQ	July 31, 30	17,200	24⅛	24⅜	23½	24	— ⅛
53	13⅛	28⅜	8⅞	699,066	10	Indian Refining	....	Dec. 15, 20	37,700	14⅛	14⅛	12¼	12½	— 1½
51¼	11½	27¾	8⅛	568,816	10	do certificates	....	.....	.....	....	....	....	....	.....
38⅜	16½	29½	21¼	3,994,150	N.P.	Lago Oil & Transport	....	Aug. 2, 27	.....	....	....	....	....	.....
18	7	12	8	1,187,701	N.P.	Louisiana Oil Refining	....	.....	10,000	9⅝	9¾	9	9½	0
100¼	80	89½	80⅛	40,000	$100	do pfd.	$1.62½Q	Aug. 15, 30	20	....	88	87½	87½	— 2½
18½	5⅞	10⅜	4½	330,000	N.P.	Maracaibo Oil Exploration	....	.....	400	5¼	5¼	5	5	— ½
295	176	182	172	459,428	$100	Mexican Petroleum	$3Q	July 31, 30	10	175	175	175	175	— 3
105	102	..	..	120,000	100	do pfd.	$2Q	July 31, 30	.....	....	....	....	....	.....
69⅜	9¼	37	16⅛	1,244,383	N.P.	Mexican Seaboard Oil	....	Oct. 15, 24	45,700	24¼	24¼	22	22¼	— 2¼
39⅞	22⅛	33	22⅛	1,899,138	N.P.	Mid-Continent Petroleum	50cQ	Aug. 1, 30	7,600	23¼	23⅝	22⅞	23	— ⅛
3⅝	¾	2½	⅞	908,171	N.P.	Middle States Oil ctfs.	....	.....	2,900	⅞	⅞	⅞	⅞	0
..	..	32	30	6,708,086	N.P.	Ohio Oil Co.	....	.....	9,400	30⅝	30⅝	†30	30⅛	— ⅜
69	40¼	64¼	51⅝	1,000,000	$50	Pan American Petrol. & Trans.	....	Oct. 20, 27	.....	....	....	....	....	.....
69¼	40½	67½	50½	2,422,221	50	do B	....	Oct. 20, 27	600	54	54	53	53½	— ½
15¾	3	12¾	4⅛	199,370	N.P.	Panhandle Prod. & Refg.	....	.....	600	5⅛	5⅛	5	5	— ½
76	47½	80	47½	25,666	$100	do pfd.	....	July 2, 23	.....	....	....	....	....	.....
..	..	27¼	17⅛	2,937,900	N.P.	Petroleum Corp. of America	37½cQ	June 30, 30	7,400	18	18¼	†17⅛	17⅝	— ¼
47	24¼	44⅜	29⅛	2,670,089	N.P.	Phillips Petroleum Co.	50cQ	June 30, 30	19,400	32⅞	32⅞	31⅝	32	— ½
3⅜	1	2½	1	1,184,917	$25	Pierce Oil Corp.	....	.....	2,700	1	1	1	1	— ⅛
51½	20	52	20½	150,000	100	do pfd.	....	Feb. 1, 22	500	26	26	25	25	— 1
5⅞	½	7⅛	2¼	2,500,000	N.P.	Pierce Petroleum Corp.	....	.....	7,600	4½	4⅞	4½	4⅝	0
65⅜	40½	54	33¾	2,435,670	$25	Prairie Oil & Gas Co.	50cQ	June 30, 30	700	34½	34½	34	34	— ½
65	45	60	43⅞	4,050,000	25	Prairie Pipe Line Co.	‡75cQ	June 30, 30	3,000	44⅞	44⅞	†43⅞	43⅞	— 1⅛
25⅞	4	31	6⅛	749,017	50	Producers & Refiners Corp.	....	Sept. 15, 30	500	6½	7	†6⅞	6¾	— ⅛
46¾	25½	38	29	56,907	50	do pfd.	....	May 4, 25	110	....	31	†29	29	— 2
30¾	20	27¼	19⅛	3,038,370	25	Pure Oil Co.	37½cQ	Sept. 1, 30	8,500	19½	19¾	†19⅛	19¼	— ½
116	108	114¼	109½	130,000	100	do 8% pfd.	$2Q	July 1, 30	160	....	112	110	111	+ ½
49⅝	22⅝	28¼	14¾	2,101,550	25	Richfield Oil (California)	50cQ	Sept. 1, 30	19,300	16⅞	17	15¼	15½	— 1⅜
42½	15	25¾	13	1,235,270	N.P.	Rio Grande Oil Co.	50cQ	July 25, 30	26,000	15⅞	15⅞	†13	13½	— 2⅛
64	43⅛	56½	45¾	951,310	$13.40	Royal Dutch (N. Y. shares)	$1.875	Aug. 13, 30	22,000	48⅛	48½	47½	48	— ¼
55¾	43⅜	48⅜	40	77,492	L2	Shell Trans. & Trading	$1.453	July 28, 30	1,130	....	41¾	41	41½	— ½
31¾	19	25½	14	13,069,076	N.P.	Shell Union Oil Corp	35cQ	June 30, 30	7,900	14½	14¾	14	14⅛	— ¼
..	..	106¼	91	400,000	100	do pfd.	$1.37½Q	July 1, 30	400	....	91¾	†91	91¾	+ ⅛
40⅛	15	37	18	869,295	10	Simms Petroleum Co.	40cQ	June 14, 30	500	20	20	19¼	19¼	— ¾
45	21	32	20	5,455,665	N.P.	Sinclair Consolidated Oil Corp.	50cQ	July 15, 30	28,300	21⅛	21½	20⅜	20⅜	— ¼
111	103	112¼	108	154,685	100	do pfd.	$2Q	Aug. 15, 30	600	....	110¾	110⅜	110⅜	0
46½	42	42	26¾	1,097,650	$25	Skelly Oil Co.	50cQ	June 16, 30	1,500	26⅞	26⅞	†26¾	26⅞	— ⅛
..	..	99¾	83	120,000	100	do pfd.	$1.50Q	Aug. 1, 30	200	86	86	85	85	— 1
..	..	106	98	750,000	100	S. O. Export Corp. pfd.	$2.50S.A.	June 30, 30	1,200	103½	104⅜	103½	104¼	+ ¼
81⅞	51½	75	55⅛	13,016,434	N.P.	S. O. California	62½cQ	June 16, 30	14,700	60⅞	60⅞	59½	59¾	— ¾
..	..	49	27½	320,000	$25	S. O. Kansas	50cQ	June 16, 30	1,100	30	30	†27½	28	— 2
83	48	84⅛	58	25,443,643	25	S. O. New Jersey	‡25cQ	June 16, 30	102,000	69¾	69¾	66⅞	67½	— 2½
48⅛	31¾	40⅝	30	17,809,530	25	S. O. New York	40cQ	June 16, 30	18,100	31	31	30⅜	30⅝	— ⅛
86¾	55	70	50	1,416,911	N.P.	Sun Oil Co.	25cQ	June 16, 30	400	59	59	58⅝	59	— ⅛
105½	100	107	102½	100,000	$100	do pfd.	$1.50Q	Sept. 1, 30	170	....	107¾	107	107½	+ ½
24	5¼	9⅜	2	1,026,979	N.P.	Superior Oil Corp.	....	.....	2,200	2½	2⅝	2¼	2⅜	0
71⅞	50	60½	50⅛	9,850,724	$25	The Texas Corp.	75cQ	July 1, 30	13,400	51½	51⅞	50½	51	— 1
23⅞	9½	14½	8¼	929,947	10	Texas Pacific Coal & Oil	s2½%	Dec. 31, 29	2,200	8½	8⅝	8¼	8¼	— ⅜
23½	10	17¾	10¾	5,881,980	N.P.	Tide Water Associated Oil.	30cS.A.	Aug. 15, 30	12,000	13⅛	13⅛	12⅜	12⅜	— ⅝
90⅞	74⅛	89¾	78	732,550	$100	do pfd.	$1.50Q	July 1, 30	200	81⅝	81⅝	81⅝	81⅝	— 1⅜
40	14	31	19½	2,191,820	N.P.	Tide Water Oil Co.	20cQ	June 30, 30	200	21¼	21¼	21¼	21¼	— 4
97½	85⅛	94⅞	83	199,443	$100	do pfd.	$1.25Q	Aug. 15, 30	300	....	90	89⅞	89⅞	— ⅝
..	..	24	12⅛	3,339,150	N.P.	Transcontinental Oil.	30c	May 1, 30	.....	....	....	....	....	.....
57	42⅜	50	37	2,201,008	$25	Union Oil Co. (California)	‡50cQ	Aug. 9, 30	2,200	39⅜	40	38⅛	39	— 1
..	..	38½	25½	1,254,048	N.P.	Union Tank Car Co.	40cQ	June 2, 30	1,900	26½	26¾	26⅛	26⅛	— ⅞
42⅞	15	27	11	777,603	N.P.	Warner Quinlan Co.	25cQ	July 3, 30	6,000	11⅛	11⅛	11	11	— ⅝
38	25	29½	26	490,000	N.P.	White Eagle Oil & Refg.	50cQ	Apr. 20, 30	.....	....	....	....	....	.....
29¾	12⅜	21	11½	428,967	N.P.	Wilcox Oil & Gas Co.	....	May 10, 28	500	14	14¼	13½	13½	— 1

*New high †New low ‡Also extra s-Stock Total sales 535,700

Sinclair Deal Ratified By Stockholders

NEW YORK, Sept. 20.—Stockholders of Sinclair Consolidated Oil Corp. have approved sale of company's half-interest in Sinclair Pipe Line Co. and Sinclair Crude Oil Purchasing Co. to Standard Oil Co. of Indiana for $72,500,000.

They also approved issuance of 5,000,000 no par preference shares which are junior to the present 8 per cent Sinclair preferred stock, no more of which will be issued.

It is not the intention of the company to issue any of the new preference stock at present. E. W. Sinclair, president, stated.

Mr. Sinclair said the company was amply protected on crude oil and pipe line facilities but made no statement concerning progress of negotiations for a merger of Sinclair, Prairie Oil & Gas Co. and Prairie Pipe Line Co.

Sinclair's revised authorized capitalization is 141,094 shares of 8 per cent preferred stock, 5,000,000 shares of no par preference stock and 20,000,000 shares of no par common stock.

Paragon to Dissolve

CINCINNATI, Sept. 20.—Dissolution of Paragon Refining Co. is to take place at a special meeting of Paragon stockholders here Sept. 29. Liquidation of Paragon is proceeding but no estimate is yet available of what the value will be. Assets of Paragon except its stock in Valvoline Oil Co. were sold to the Gulf interests. The Valvoline stock was bought by E. W. Edwards, president of Paragon.

Pittsburgh Curb Market

Transactions week ended Sept. 19, 1930

	Sales	High	Low	Last	Change
Arkansas Gas A..	285	9¼	9⅛	9⅛	— ½
Gulf Oil.....	100	116	116	116	....

Pittsburgh Stock Exchange

Transactions week ended Sept. 19, 1930

	Sales	High	Low	Last	Change
Ark. Nat. Gas....	50	10	9½	9½	— ¼
do pfd.....	350	8	7¾	7¾	— ¼
Devonian Oil....	100	8½	8⅜	8⅜	— ⅛
Leonard Oil.....	100	1½	1½	1½	+ ¼
Lone Star Gas....	2,400	39½	38¼	38½	— ⅝
do pfd.....	200	106	106	106	....
Plymouth Oil....	400	25	24½	24½	— ½
Phoenix Oil.....	2,500	.50	.45	.50	....
Shamrock O. & G.	1,355	17⅛	16	16	—2
Waverly Oil A...	50	21½	21½	21½	+1½

Sunray Nets $439,615

TULSA, Sept. 20.—Profits of Sunray Oil Corp. the first half of 1930 were $439,615, after depreciation, depletion and federal taxes, the company announced.

Aviation Gasoline Prices

(Continued from Page 229)

S. O. OHIO

Thru Ohio	17	4	21

Discounts given by S. O. Ohio: For airport delivery only: 2,000 gals. or over per month, 1c per gal.; 6,000 gals. or over per month, 2c; 12,000 gals. and over per month, 3c.

S. O. INDIANA

Chicago	17	3	20
Indianapolis, Ind.	17.2	4	21.2
Detroit, Mich.	17.8	3	20.8
Milwaukee, Wis.	17.1	2	19.1
Minneapolis, Minn.	18.2	3	21.2
St. Louis, Mo.	16.4	2½	18.9
Kansas City, Mo.	16.9	3	19.9
Fargo, N. D.	19.9	3	22.9
Huron, S. D.	18.3	4	22.3
Wichita, Kan.	15.8	3	18.8

In S. O. Indiana territory, buyer pays state and city taxes on aviation gasoline, and if he can get a refund from the state, he does so. St. Louis tax of 2½c includes ½c city tax and Kansas City tax includes 1c city tax.

S. O. LOUISIANA

New Orleans, La.	16	5	21
Nashville, Tenn.	18	5	23
Memphis, Tenn.	17	5	22

2c per gal. discount off above t.w. prices to dealers and commercial consumers.

S. O. NEBRASKA

Omaha	18.25	4	22.25

2c per gal. refund to resellers.

CONTINENTAL OIL CO.

*Denver, Col.	15	4	19
Cheyenne, Wyo.	19.5	4	23.5
Helena, Mont.	25.5	5	30.5
Salt Lake City, Utah	19.5	3.5	23
†Albuquerque, N. M.	15	5	20
Boise, Ida.	21.5	5	26.5

*1c per gal. discount to dealers at Denver. †2c per gal. discount to dealers at Albuquerque.

S. O. CALIFORNIA

Phoenix, Ariz.	17	4	21
Los Angeles, Cal.	19.5	3	22.5
San Francisco, Cal.	20	3	23
Reno, Nev.	24	4	28
Portland, Ore.	19.5	4	23.5
Seattle, Wash.	19.5	3	22.5
Spokane, Wash.	23.5	3	26.5

4c per gal. discount off t.w. price of gasoline to customers taking tank truck delivery, through S. O. California territory, except 1c discount at Phoenix.

Columbia Buys Share In Big Gas Line

NEW YORK, Sept. 20.—Columbia Gas & Electric Co. is acquiring a half interest in the Panhandle Eastern Pipe Line Co., which is building a natural gas pipe line from the Texas Panhandle to Indianapolis and Kentucky. The other half interest in the pipe line is owned by Missouri-Kansas Pipe Line Co. which promoted the enterprise.

Missouri-Kansas is reducing its listing of capital stock on the Chicago Stock Exchange by 1,204,686 shares. Of that number 1,000,000 covers cancellation of underwriting contract with Frank P. Parish & Co. of Chicago and 204,686 shares subscribed to but not accepted by investors.

Underwriting of the pipe line's securities will be handled by the National City Co. of New York, the securities agency of the National City Bank.

THE OIL INDUSTRY EXCHANGE

Positions Wanted

GRADUATE CHEMICAL ENGINEER, over 12 years experience as superintendent and chemist in the development, manufacture and control of a complete line of petroleum products, oils, greases, soaps, etc. Address Box 586.

SALES EXECUTIVE AND LUBRICATING ENGINEER desires change. Fifteen years road and plant experience. Large acquaintance, Boston to Chicago. Versed in mechanical and chemical requirements. Age 38. Prefer Atlantic Coast location. Address Box 587.

PACIFIC COAST is where I desire to represent any refiner of high grade Paraffine base oils, Penna. Oils preferred. Can positively guarantee volume and wide distribution. Qualifications, 15 years oil marketing experience, also blending and compounding. Young man with dynamic personality and very aggressive. Executive ability. Excellent references. Address Box 585.

ADVERTISING AND SALES EXECUTIVES

The Advertising Men's Post of the American Legion—Free Employment Service, has several members who can qualify for the position of Salesman, Advertising Manager, Sales Manager, etc.

Please send a statement of your requirements to J. E. Byrnes, Chairman of the Committee, at the address given below.

Before you are requested to interview any man, the committee, composed as follows, will make a preliminary examination of his qualifications in the light of your needs:

F. Mullen, National Broadcasting Co.
J. Rodgers, McGraw Hill Co.
A. G. Ensrud, J. Walter Thompson Co.
F. H. Ralsten, F. H. Ralsten Co.
H. G. Schuster, Chicago Daily News
G. Blocki, Good Housekeeping Magazine
Ralph Niece, Nation's Business
W. W. Ross, Williams, Lawrence & Cresmer Co.

Address

J. E. Byrnes, Chairman, Employment Committee, Advertising Men's Post-American Legion, Room 1305—66 E. So. Water, Chicago, Illinois.

Situations Open

GRADUATE CHEMICAL ENGINEER WANTED, on plant problems. Write stating training, refinery experience and salary desired to G. E. B., Room 1124, 342 Madison Ave., New York City.

SALES CORRESPONDENT

The sales manager of an oil company headquartering in New York City wants a college graduate familiar with oil refining and lubrication salesmanship to act as an assistant. The principal qualifications are excellent English and ability to handle efficiently large technical sales correspondence. This is an inside job offering good opportunities for advancement. State qualifications fully.

Address "B.W.", care National Petroleum News, 342 Madison Ave., New York City

For Sale

BULK PLANT FOR SALE

45,500 Gallons storage metal warehouse unloading pump located Glenbrook, Conn. Ideal for fuel oil or general jobbing business. Low price for quick sale.

Renick & Mahoney, Inc.
114 Liberty St.
New York, N. Y.

Business Opportunities

PETROLEUM PRODUCTS BOUGHT ON COMMISSION

Make this office your Tulsa buying office on a commission basis.

Let's Exchange References

DALE W. MOORE
405 Philtower Bldg., Tulsa, Okla.
Telephones: 3-4177 and 3-4178
L. D. 136

Professional

L. G. Huntley — J. R. Wylie, Jr.
William J. Millard

HUNTLEY & HUNTLEY
PETROLEUM GEOLOGISTS AND ENGINEERS

Grant Building — PITTSBURGH, PA.

Patent Attorney

ROYAL E. BURNHAM
Attorney-At-Law

Patent and Trade-Mark Practice Exclusively

Continental Trust Building
Washington, D. C.

Miscellaneous

WHAT IT COSTS

"For Sale," "Wanted to Buy," "Help Wanted," "Business Opportunities."

"Miscellaneous" classifications, set in type this size without border—10 cents a word. Minimum charge, $3.00.

"Position Wanted"—5 cents a word. Minimum charge $1.00.

Advertisements set in special type or with border—$4.00 per column inch.

Copy must reach us not later than Friday preceding date of issue.

All advertisements carried on this page are payable in advance.

Advertisers having box numbers should be addressed in care of National Petroleum News, 1213 West 3rd Street, Cleveland, Ohio, unless otherwise specified.

Standard Oil Stocks on New York Curb

1929 High	1929 Low	1930 High	1930 Low	Outstanding Shares	Par Value	Companies	Div. Rate	Last Paid	Transactions Week Ended Sept. 20 Sales	First	High	Low	Last	Change
18¾	13½	18½	12¼	.....	£1	Anglo-Amer. Oil voting stk. ctfs..	36c	June 5, 29	.....	....	....	....	....	.....
17⅛	11	19	12	.....	£1	do non-voting stk. ctfs.....	36c	June 5, 29	.....	....	....	....	....	.....
2½	¾	1	⅜	500,000	N.P.	Atlantic Lobos Oil.....	....	.....	.....	....	....	....	....	.....
4⅛	1	1½	1	200,000	$50	do pfd.....	....	.....	.....	....	....	....	....	.....
46½	25	25	14	40,000	25	Borne Scrymser Co.....	$1S.A.	Apr. 15, 30	.....	....	....	....	....	.....
74¼	55	69	54	200,000	50	Buckeye Pipe Line Co.....	$1Q	June 14, 30	200	54	55	54	54	0
210	130	184⅞	140⅛	120,000	25	Chesebrough Mfg. Co.....	‡$1Q	June 30, 30	.....	....	....	....	....	.....
11¾	5⅝	7⅝	5¼	.....	N.P.	Creole Petroleum Co.....	....	.....	28,200	5⅝	5⅝	5½	5½	0
75¾	40	65¾	30½	30,000	$50	Cumberland Pipe Line Co.....	$1Q	June 16, 30	.....	....	....	....	....	.....
70½	42	54¾	39	50,000	100	Eureka Pipe Line Co.....	$1Q	Aug. 1, 30	.....	....	....	....	....	.....
...	...	6¾	2½	280,000	N.P	Galena Oil Corp. w.i.....	....	.....	.....	....	....	....	....	.....
...	...	37¼	30	.....	N.P.	General Petroleum Corp. w.i.....	....	.....	.....	....	....	....	....	.....
128	74⅛	119	78	2,974,645	$25	Humble Oil & Refg. Co.....	50cQ	July 1, 30	3,600	88½	88½	86	86	— 2½
41	22	30	18⅛	26,490,741	N.P.	Imperial Oil, Ltd.....	12½cQ	June 2, 30	11,900	22⅛	23½	22	22⅜	— ⅝
42⅛	26	41	31¾	300,000	$10	Indiana Pipe Line Co.....	‡50cQ	Aug. 15, 30	400	31¾	32	31¾	32	0
29⅜	15	24	17½	14,247,880	N.P.	International Petroleum Co.....	25c	June 16, 30	34,900	19	19	18¾	18⅞	0
25⅞	10½	22⅜	15⅛	509,000	$12½	National Transit Co.....	25cQ	June 16, 30	400	16⅛	16⅛	16⅛	16⅛	— ⅜
17¾	10	21	10⅛	100,000	10	New York Transit Co.....	40cQ	July 15, 30	.....	....	....	....	....	.....
63	41	54	35	40,000	50	Northern Pipe Line Co.....	$2S.A.	July 1, 30	.....	....	....	....	....	.....
105¼	103¾	108	103	600,000	100	Ohio Oil pfd.....	$1.50Q	June 14, 30	.....	....	....	....	....	.....
44½	18⅝	32	17	400,000	25	Penn Mex. Fuel Co.....	$1	May 20, 30	400	24¾	24⅞	24½	24½	+ 3½
50	29	33	10⅜	160,000	25	Solar Refining Co.....	$1.25S.A.	Dec. 20, 29	500	11⅛	11⅛	11⅛	11⅛	+ ⅛
23½	13	20⅛	10⅛	100,000	10	Southern Pipe Line Co.....	$5	Sept. 2, 30	100	10⅛	10⅛	†10⅛	10⅛	— 7⅞
60¼	35⅛	45⅞	35	1,200,000	25	South Penn Oil Co.....	‡50cQ	June 20, 30	400	37	37	36⅛	36⅛	— ⅞
70	45	64	44	35,000	50	Southwest Pa. Pipe Lines.....	$1Q	July 1, 30	.....	....	....	....	....	.....
63	45	59⅞	47⅝	16,850,587	25	S. O. Indiana.....	62½cQ	June 16, 30	12,100	49½	49½	48⅝	48⅝	— ¾
46⅞	29	40½	29⅜	2,577,124	10	S. O. Kentucky.....	40cQ	June 30, 30	8,700	31	31	†29⅜	29⅞	— ⅞
50¼	40	48⅞	44⅛	188,159	25	S. O. Nebraska.....	‡62½cQ	June 20, 30	300	47⅛	47⅞	47⅛	47⅞	0
129	60	108½	73¼	560,000	25	S. O. Ohio.....	62½cQ	July 1, 30	200	77	77	†73½	73½	— 2½
124½	113½	122	115¼	70,000	100	do pfd.....	$1.75Q	Sept. 2, 30	40	118½	118¾	118½	118¾	+ ¼
18	5⅛	10	5	34.158	25	Swan Finch Oil Corp.....	....	Jan. 15, 29	.....	....	....	....	....	.....
133¾	75⅜	97⅞	76¼	5,139,887	25	Vacuum Oil Co.....	$1Q	June 20, 30	5,700	78	78½	76⅞	77	— 1

*New high †New low ‡Also extra

Independent Oils on New York Curb

1929 High	1929 Low	1930 High	1930 Low	Par Value	Companies	Transactions Week Ended Sept. 20 Sales	First	High	Low	Last	Change
.72	⅛	⅜	1/16	$1	Amer. Contr. Oilfields	.....	....	....	....	....	.....
8⅝	1⅜	4½	1½	5	Amer. Maracaibo.....	600	2	2	1¾	1¾	— ¼
4⅜	1	1⅜	1¼	10	Argo Oil.....	.....	....	....	....	....	.....
26	3¾	16¾	8¾	N.P.	Arkansas Nat. Gas...	900	9¾	9⅞	9⅛	9⅛	— ⅞
24¾	6½	16⅝	8⅛	N.P.	do Class A.....	11,400	9⅛	9⅝	9	9⅛	— ⅜
9	4	8⅛	7⅝	10	do pfd.....	300	7⅞	7⅞	7⅞	7⅞	0
70	50	28½	17	N.P.	British American Oil..	.....	....	....	....	....	.....
4⅞	⅞	2¾	¾	¼	Carib Syndicate.....	900	1⅜	1⅜	1¼	1¼	0
68½	20	44¼	24⅛	N.P.	Cities Service.....	45,200	28⅜	28¾	27⅝	28	— ¾
99¼	84	93⅞	52	100	do pfd.....	300	91	91⅜	91	91⅜	+ ½
9¼	8	9	7⅝	10	do pref. B.....	.....	....	....	....	....	.....
96	81	89⅞	82	100	do pref. BB.....	.....	....	....	....	....	.....
1½	¼	1/16	¼	1	Colombia Syndicate..	2,500	¼	5/16	¼	5/16	+ 1/16
15	3⅞	8¼	3½	N.P.	Colon Oil Corp.....	1,700	3¾	3⅞	3¾	3¾	0
...	...	21	5¾	N.P.	Columbia Oil & Gas..	28,400	8½	9¾	8	9½	+ 1⅜
11⅜	2½	5⅞	3½	10	Consolidated Royalty	1,800	3½	3¾	3½	3½	0
135	42	74¾	27⅝	N.P.	Cosden Oil Co.....	2,800	28¾	30	†27⅝	28⅞	— ⅜
87	55	70	60	100	do pfd.....	.....	....	....	....	....	.....
2⅛	¼	1	¼	N.P.	Crown Central Pet...	.....	....	....	....	....	.....
11⅜	4	...	...	N.P.	Crystal Oil.....	.....	....	....	....	....	.....
51⅜	51⅛	...	...	100	do pfd.....	.....	....	....	....	....	.....
26	6½	13½	7¼	N.P.	Darby Petroleum.....	700	10	10	10	10	+ 1¾
...	...	21¾	21½	N.P.	do new.....	.....	....	....	....	....	.....
11	2	11	4½	N.P.	Derby Oil & Refg.....	1,400	6¾	6¾	6½	6½	— ⅜
44	17	60	30	N.P.	do pfd.....	.....	....	....	....	....	.....
...	...	12	12	10	Devonian Oil.....	.....	....	....	....	....	.....
209	115	166⅞	115⅛	$25	Gulf Oil Corp.....	2,300	118½	119⅞	116	116	— 4
7½	1⅜	4	2¼	N.P.	Homaokla Oil.....	.....	....	....	....	....	.....
...	...	47½	26⅝	N.P.	Indian Territory A...	2,400	29¼	29⅜	28¾	28¾	— ¼
...	...	53½	26⅞	N.P.	do B.....	200	28¾	29	28¾	29	0
2⅞	⅜	1¾	⅝	10	Intercontinental Pet..	1,200	⅝	⅝	⅝	⅝	0
3⅜	1¼	3	1½	N.P.	Kirby Petroleum.....	.....	....	....	....	....	.....
6⅛	1	4¾	1⅛	N.P.	Leonard Oil & Dev...	800	1⅝	1⅝	1½	1½	— ⅛
38⅞	18	29	17¼	N.P.	Lion Oil Refg.....	100	18⅛	18⅛	†17½	18	— ⅞
67⅞	28	55⅞	34⅛	N.P.	Lone Star Gas.....	1,400	39	39	38½	38½	— ½
...	...	31	17	$25	MacMillan Petrol....	.....	....	....	....	....	.....
2⅞	¼	1½	⅛	1	Magdalena Synd.....	.....	....	....	....	....	.....
38½	14	16	12	N.P.	Margay Oil.....	.....	....	....	....	....	.....
6⅜	2¼	7½	2	N.P.	Mexico Ohio Oil.....	.....	....	....	....	....	.....
...	...	11⅞	4½	N.P.	Middle States A v.t.c.	2,300	6⅛	6⅛	6	6⅛	0
...	...	6	2⅛	N.P.	do Class B v.t.c...	1,900	2½	2½	2½	2½	0
42	8	36¼	14½	5	Missouri-Kansas P.L.	4,900	16½	21½	†14½	19	+ 2⅛
1½	¼	¾	⅜	1	Mountain & Gulf Oil..	100	½	½	½	½	+ 1/16
22⅞	7	12⅛	8	10	Mountain Producers..	800	9⅜	9½	9¼	9½	+ ½
43⅞	24	41⅜	25⅛	N.P.	Nat. Fuel Gas.....	2,100	32⅛	32⅛	31½	31½	— 1½
5	2¼	3½	2¾	$5	New Bradford Oil...	100	2¼	2⅜	†2¼	2¼	— ¼
4¾	3⅛	3⅛	2⅜	10	New England Fuel...	.....	....	....	....	....	.....
24½	11⅜	16⅞	8½	25	N. Y. Pet. Royalty...	100	14	14	14	14	— 1
18½	6⅛	11¼	6	N.P.	North Central Texas	.....	....	....	....	....	.....
19¼	8⅛	11⅜	7⅝	N.P.	Oilstocks Ltd. A.....	400	7¾	7⅞	7¾	7¾	0
18¼	8½	11½	8½	N.P.	do B.....	500	9¾	9⅞	9	9	— ¾
26⅝	12⅛	19½	12½	N.P.	Pacific Western Oil...	2,100	15½	16	15¼	15⅜	+ ¼
3½	½	2½	⅜	N.P.	Pandem Oil.....	8,400	1/16	½	3/8	1/16	0
10½	2¼	4⅜	1¾	N.P.	Pantepec Oil.....	1,500	3⅛	3⅛	2⅜	2½	— 1
25½	13⅜	15	13¼	$25	Paragon Refg. B. ctfs.	.....	....	....	....	....	.....
28	17	29	19⅛	N.P.	Petroleum Corp.....	.....	....	....	....	....	.....
...	...	5⅞	2½	....	do warrants.....	100	2⅝	2⅝	†2½	2½	— ¼
37	22	27½	20⅞	N.P.	Plymouth Oil.....	1,100	25½	25½	25	25⅛	— ⅛
16	9	10½	8	$5	Red Bank Oil.....	400	8	8	8	8	0
8½	1⅛	5⅜	2¼	N.P.	Reiter-Foster Oil.....	800	3	3	3	3	— ⅛
25¼	19	23½	17½	25	Richfield Oil pfd....	100	18	18	18	18	0
29	13	25	8	N.P.	Root Refining pr. pfd.	.....	....	....	....	....	.....
11	3	8⅝	2½	N.P.	Ryan Consolidated...	200	3½	3½	3½	3½	0
5⅞	1⅞	2½	1⅜	10	Salt Creek Consol....	.....	....	....	....	....	.....
25⅞	9	15¼	8	10	Salt Creek Producers.	1,800	10¼	10⅜	10⅛	10¼	0
33⅛	10	8	5⅝	25	Shreveport El Dorado	.....	....	....	....	....	.....
...	...	39⅛	39	25	Signal Oil & Gas A...	.....	....	....	....	....	.....
24	9	17	8	N.P.	Southland Royalty...	2,000	8¼	8⅜	†8	8¼	0
12	4	10	4⅞	5	Sunray Oil.....	1,900	5	5⅜	5	5	0
23	7⅛	19½	8⅜	N.P.	Texon Oil & Land....	100	12¾	12¾	12¾	12¾	— 1¼
81⅛	8⅜	16	8	10	Venezuela Mexico....	.....	....	....	....	....	.....
6½	1⅛	4½	2	5	Venezuela Petroleum.	800	2⅜	2⅜	2⅛	2⅛	— ⅛
9⅛	2	5	2	1	Woodley Petroleum..	300	4	4	4	4	+ ⅛
5⅜	¼	2½	½	N.P.	Y Oil & Gas.....	.....	....	....	....	....	.....

*New High †New Low

New York Bonds

Week Ending Sept. 19

	High	Low	Last	Change
Asso. Oil gold 6s.....	104	103½	103½	— ¼
Atlantic Refg. deb. 5s...	103	102½	103	0
Cal. Pet. 5s.....	100	99¾	100	— ¼
Cal. Pet. 5½s.....	102½	101½	102¼	— ¼
General Pet. 5s.....	102½	102½	102½	— ¼
Humble Oil & Refg. 5s..	102⅜	102⅛	102⅜	+ ⅛
Humble Oil & Refg. 5½s	102⅝	102⅜	102⅝	+ ¼
Pan Amer. P & T 6s.....	104½	104	104½	+ ⅜
Pan Amer. P & T 6s.....	93	92½	93	— ½
Phillips Pet. 5¼s.....	97¼	96⅞	97¼	+ ¼
Pure Oil 5½s.....	100½	100¼	100¼	— ⅛
Pure Oil 5½s.....	99¾	99¼	99½	— ¼
Richfield Oil Calif. 6s....	87¼	83½	87	+4
Shell Union Oil 5s.....	96⅞	96½	96⅝	—1
Shell Union Oil 5s with war.	98	97½	97⅝	0
Sinclair Con. Oil 7s.....	104¾	104¾	104⅜	0
Sinclair Con. Oil 6½s....	104	103½	103¾	+ ¼
Sinclair Crude 5½s.....	102¼	102	102⅛	— ⅛
Sinclair Pipeline 5s.....	102¾	102	102⅜	— ⅛
Skelly Oil 5½s.....	96⅞	96¼	96⅞	+ ⅜
S. O. N. J. 5s.....	104½	103¾	104¼	0
S. O. N. Y. 4½s.....	100½	99¾	99¾	— ½
Transcontintnal Oil 6½s war.....	109⅞	109⅞	109⅞	0
Transcontinental Oil 6½s Ex-war.....	101	100½	100½	0
Union Oil of Calif. 5s C..	101½	101⅜	101½	— ¼
Union Oil of Calif. 5s war.	101½	99⅞	100	+ ¼
Warner-Quinlan 6s.....	80	80	80	0
White Eagle Oil 5½s war.	104½	104⅛	104½	0

New York Curb Bonds

Week Ending Sept. 19

	High	Low	Last	Change
Cities Serv. 5s '66.....	84⅞	83½	83½	0
Cities Serv. 5s '50.....	101½	100	100½	—1
Cities Serv. G. 5½s '42...	86¾	85⅛	85⅛	—1⅞
Cities Serv. G. P. 6s '43..	93⅞	93¼	93¼	+ ¼
Cont. Oil 5½s '37.....	98	97½	98	0
Empire O & R 5½s '42..	87	86	87	+ ¼
Gulf Oil 5s '37.....	103	102¼	103	+ ⅝
Gulf Oil 5s '47.....	103⅞	103½	103½	— ⅜
Indep. Oil 6s '39.....	103½	103⅜	103½	+ ½
Valvoline Oil 7s '37.....	103	102	102	— ⅝

Oil Dividends

	Amount	Payable	Stock of Record
Cities Service m.....	2½c	Nov. 1	Oct. 15
do stock.....	½%	Nov. 1	Oct. 15
do pfd. & pfd. BB...	50c	Nov. 1	Oct. 15
do pfd. B.....	5c	Nov. 1	Oct. 15
Indiana P. L. q.....	50c	Nov. 15	Oct. 24
do extra.....	25c	Nov. 15	Oct. 24
Lion Oil q.....	50c	Oct. 27	Sept. 29
Louisiana Oil pfd. q....	$1.62½	Nov. 15	Nov. 1
Mid-Cont. Pet.....	50c	Nov. 15	Oct. 15
Mountain & Gulf q.....	2c	Oct. 15	Sept. 30
New Bradford Oil q.....	12½c	Oct. 15	Sept. 30
Paragon Refining pfd. q.	75c	Oct. 1	Sept. 20
Sunray Oil q.....	10c	Oct. 15	Sept. 30
Washington Oil q.....	75c	Sept. 20	Sept. 16

INDEX TO ADVERTISERS

This index is published as a convenience to the reader. Every care is taken to make it accurate, but National Petroleum News assumes no responsibility for errors or omissions.

Adamson Mfg. Co.
Allis Co., Louis ... 81
Almo Corp.
American Can Co.
American Flange & Mfg. Co.
American La France & Foamite Corp. ... 106
American Oil & Grease Corp.
American Oil Pump & Tank Co. ... 170–171
American Radiator Co.
American Telephone and Telegraph Co.
Anderson-Prichard Oil Corp. ... 34
Aro Equipment Corp.
Associated Business Papers, Inc.
Autocar Co.

Badger & Sons Company, E. B.
Barnsdall Refineries, Inc. ... 6–7
Bart Products ... 192
Battenfeld Grease & Oil Corp.
Benjamin Electric Mfg. Co.
Bennett Export Corp.
Berry Sons' Co., Jas. B.
Bethlehem Steel Co. ... 211
Blackmer Pump Co. ... 155
Bowser & Co., Inc., S. F. ... 178–179
Brockway Motor Truck Corp.
Brodie Co., Inc., Raiph N. ... 18–19
Brookins Mfg. Co.
Brown Instrument Co. ... 112
Brown Sheet Iron & Steel Co.
Buckeye Iron & Brass Works ... 2–3
Budd Wheel Co.
Buffalo Meter Co. ... 35
Bullard-Davis, Inc.
Burford Oil Co. ... 44–45
Butler Mfg. Co. ... 197

Calorizing Co. ... 141
Canfield Oil Co. ... 14–15
Carbide & Carbon Chemicals Corp.
Carbondale Machine Co.
Champion Pneumatic Mach. Co.
Champlin Refining Co.
Chek-Chart Corp.
Chevrolet Motor Co.
Chicago Bridge & Iron Works ... Insert
Cincinnati Advertising Products Co. ... 86
Cincinnati Ball Crank Co. ... 89
Classified Advertising ... 237
Clear Vision Pump Co.
Cleveland Brass Mfg. Co.
Col-Tex Refg. Co.
Columbian Steel Tank Co. ... Insert
Combustion Engineering Corp. ... 66
Continental Can Co., Inc. ... Insert
Continental Oil Co. ... 12–13
Continental Refining Co.
Continental Rubber Works ... 223
Continental Supply Co.
Correct Measure Co.
Crouse-Hinds Co. ... 32
Crown Central Petroleum Corp.
Cushing Refining & Gasoline Co.
Curtis Pneumatic Machinery Co. ... 118–119

Daugherty & Son Refg. Co., W. H.
Davis Welding & Mfg. Co ... 36–37 Third Cover
Dayton Air Compressors
Dayton Pump & Mfg. Co. ... 198
Deep Rock Oil Corp. ... 40
Deming Co.
Derby Oil Co.
Detroit Testing Laboratory
Devine Mfg. Co., J. P.
Dodge Brothers
Doheny Stone Drill Co. ... 102–103
Draper Mfg. Co.
du Pont de Nemours & Co., E. I.
Dyestuffs & Chemicals, Inc. ... 199

Eaton Bumper & Spring Service Co.
Economy Engineering Co. ... 9
Edeleanu Company, Ltd.
Edwards Mfg. Co. ... 30
Edward Valve & Mfg. Co.
El Dorado Refg. Co. ... 84
Empire Oil & Refining Co. ... 22
Erie Meter Systems, Inc.
Ethyl Gasoline Corp.

Ferro Machine & Foundry Co. ... 4–5
Fiske Bros. Refg. Co. ... 204
Foster-Wheeler Corp. ... 150
Foxboro Co., Inc.
Freedom Oil Works Co.
Fruehauf Trailer Co.
Frick-Reid Supply Corp.

Galena Oil Corp.
General Electric Co.
General Motors Truck Co. ... 70
General Porcelain Enameling & Mfg. Co.
General Tire & Rubber Co. ... 48
Gilbert & Barker Mfg. Co. ... Insert
Globe Machinery & Supply Co. ... Insert
Globe Oil & Refg. Co.
Goodrich Rubber Co., B. F.
Goodyear Tire & Rubber Co., Inc.
Gott Mfg. Co., H. P.
Granberg Meter Corp.
Graver Corp.
Graver Tank & Mfg Corp.
Gray Co., Inc.
Gray Processes Corp. ... 104
Grinnell Co. ... 72
Griscom-Russell Co.
Gulf Ref. Co. ... 225
Gun-Fil Corporation

Hanlon-Buchanan, Inc.
Heat Transfer Products, Inc. ... 10
Highland Body Mfg. Co.
Highway Trailer Co.
Hodges Sign Co. Jos. C. ... 200
Humble Oil & Refg. Co.
Hybnickel Alloys Co.

Icy-Flo Oil Co. ... 125
Independent Oil & Gas Co. ... 158
Independent Refining Co. ... 173
Indiana Truck Corp.
International Harvester Co. ... 42
International Lubricant Corp. ... 122
International Petroleum Exposition ... 128

Jackson Engineering Corp.
Jenkins Bros. ... 191–221
Jesco Lubricants Co.
Johnson Oil Refg. Co.

Kanotex Ref. Co.
Kellogg Mfg. Co.
Kellogg Co., M. W. ... 142–143–199
Kewanee Safe Co.
Key Boiler Equipment Co. ... 162–163
Klenzmotor Corp. ... 180

Lapeer Corp.
Leach Co., C. H.
Leader Iron Works, Inc.
Leland Electric Co.
Leonard Construction Co. ... 132
Lientz & Company, B. P.
Limbert & Co., Geo. B. ... 229
Lion Oil Refining Co.
Liquidometer Co.
Louisiana Oil Refg. Corp. ... 8
Luce Trunk Co.

Macbeth-Evans Glass Co.
Marathon Oil Co. ... 11
Marion Machine, Foundry & Supply Co. ... 229
Martin & Schwartz, Inc. ... 26–27
Master Electric Co.
McClintic-Marshall Co. ... 187
McDonald Mfg. Co., A. Y.
McKee & Co., Arthur G. ... 153
Merco Nordstrom Valve Co.
Merit Equipment Corp. ... 205
Metal Hose & Tubing Co. ... 47
Meyercord Co. ... 82–83
Mid-Continent Petroleum Corp. ... 117
Milestone Meter Systems, Inc.
Miller Sons' Co., A. D.
Milwaukee Tank Works ... 114
Morrison Bros.
Mutual Refg. Co.

National Brake & Electric Co.
National Carbon Co., Inc.
National Equipment Co., Inc.
National Fire Proofing Corp.
Nat'l-Petroleum Mutual Fire Ins. Co. ... 173
National Petroleum News ... 24
National Pumps Corp. ... Second Cover
National Refining Co. ... 222
National Safe & Lock Co. ... 235
National Tube Co.
Naylor Pipe Co.
Neptune Meter Co. ... 1
North American Car Corp.

Oakite Products, Inc.
Ohio Pattern Works & Foundry Co. ... 77
Ohio Steel Foundry Co. ... 147
Oil Conservation Engineering Co. ... 93
Oildraulic, Inc. ... 183
Oliver United Filters Inc. ... 190
Omar Refg. Co.
Ottawa Mfg. Co. ... 175
Owens-Illinois Glass Co.
Owosso Boiler & Welding Works
Oxweld Acetylene Co.

Pennsylvania Refg. Co.
Perfection Mfg. Co. ... 230
Perfection Stove Co. ... 184–185
Petroleum Iron Works Co. ... 168
Pforzheimer & Co., Carl H.
Pharis Tire & Rubber Co. ... 194–195
Phillips Petroleum Co.
Pittsburgh-Des Moines Steel Co.
Pittsburgh Equitable Meter Co. ... 17
Platt Co., W. C.
Pressed Steel Tank Co. ... 31
Producers & Refiners Corp. ... 28
Pure Oil Co.
Pyrene Mfg. Co.

Quincy Compressor Co. ... 23

Reading Iron Co. ... 100
Refinery Supply Co. ... 193
Reo Motor Car Co.
Republic Steel Corp. ... Insert
Revere Electric Co. ... 173
Rhodes Co., Jay B. ... 232
Roper Corp., Geo. D.
Ross Heater & Mfg. Co. ... 138
Rotary Lift Co. ... 29

Scott Welded Products, Inc.
Service Equipment Co.
Service Station Equip. Co.
Service Recorder Co.
Shand & Jurs Co. ... 200
Sharpsville Boiler Works Co. ... 201
Shepard Steel Buildings, Inc.
Sinclair Refining Co. ... 212
Sistersville Tank & Boiler Works
Skelly Oil Co. ... 43
Sonneborn Sons, L. ... 20
Southwestern Engineering Corp.
Southwest Pump Co. ... 121
Spang, Chalfant & Co., Inc. ... 98
Standard Steel Works ... 156–157
Steel Drum Accessories Corp.
Sterling Motor Truck Co.
Stockham Pipe & Fittings Co. ... 134
Strong-Scott Mfg. Co. ... 148–149
Sturtevant Co., B. F. ... 126–127
Sun Oil Co. ... Fourth Cover
Sun Shipbuilding & Dry Docks Co. ... 145
Superior Oil Works

Tagliabue Mfg. Co., C. J. ... 164
Taylor Instrument Companies ... 211
Texas Pacific Coal & Oil Co.
Tokheim Oil Tank & Pump Co.
Trailmobile Co. ... 166
Tube Turns, Inc.

Union Carbide & Carbon Corp.
Union Metal Mfg. Co. ... 25
United Engineers & Constructors, Inc.
United Oil Mfg. Co.
U. S. Air Compressor Co. ... 40–41
Universal Oil Products Co. ... 108–109
Universal Pump & Tank Corp.

Vacuum Oil Co.
Valvoline Oil Co.
Viking Pump Co. ... 131
Vilter Mfg. Co.
Viscosity Oil Co.
Vogt Machine Co., Henry ... 94–95

Wackman Welded Ware Co.
Walworth Co. ... 111
Ward Chemical Corp.
Warner Bros. Industrial Pictures, Inc.
Warner Mfg. Co. ... 182
Watson-Stillman Co. ... 189
Waverly Oil Wks. Co. ... 33
Wayne Co. ... 16
Wertzberger Derrick Co. ... 190
Wheaton Brass Works, A. W. ... 227
White Co. ... 21
Wilcox Oil & Gas Co., H. F. ... 206
Willock Oil Corp. ... 90
Wilmoh Mfg. Co.
Wilson & Bennett Mfg. Co. ... 240
Winkler-Koch Eng. Co. ... 38–39
Wolverine-Empire Refg. Co., Inc. ... 202–203

York Safe & Loch Co.

SPECIAL EXPOSITION EDITION

The Benetco Bugle

COME ON TO TULSA

Vol. I No. 1 Wednesday, September 24th, 1930

POR-PAIL SCORES BIG FOR BARNSDALL

BENETCO TO EXHIBIT AT 7TH EXPOSITION

The Wilson & Bennett Mfg. Co. Exhibit at the Seventh International Petroleum Exposition will feature a continuous pouring display to demonstrate the pouring superiority of the Por-Pail. The regular display of steel cans, drums and barrels will also be held.

The entire industry is cordially invited to drop around to the BENETCO booth.

MID-CONTINENT CORP. NOW USING BENETCO POR-PAILS & BARRELS

The Mid-Continent Petroleum Corporation is now using BENETCO Por-Pails and steel drums for the shipment and sale of their lubricants. The Por-Pail which they use is lithographed in 3 colors, a red and cream label on a black field.

Like Barnsdall, the Mid-Continent organization is using the Por-Pail to really merchandise its 5 gallon motor oil sales. Every marketer after inspecting this colorfully lithographed steel can will concede its greater sales power over older types of oil cans.

Mid-Continent is using BENETCO 15, 30 and 55 oil and grease drums all of which are being painted in distinctive color combinations.

Tank Wagons and Stations Learn How Por-Pail Boosts 5 Gallon Oil Sales

Barnsdall's Success Proves the Sales Power of the Por-Pail

Tank wagon and filling station salesmen of the Barnsdall Refining Co. are demonstrating the sales power of the Por-Pail. pours there is no splash or drip; it pours fast and accurately giving the maximum convenience.

by their success in boosting 5 gallon motor oil sales.

Everett Mayo, Barnsdall truck salesman at Tulsa (shown above with his truck loaded with Por-Pails) has run such heavy Por-Pail sales that he has been dubbed the "Por-Pail Kid".

The Por-Pail is the first steel pouring can to offer these features of perfect pouring and permanent utility. When it

When the pail has been emptied the lug cover is pried off giving the user an empty steel pail for miscellaneous usage. Permanent utility for the customer—Permanent advertising for the marketer.

Other large refiners and marketers, among them Shell, Mid-Continent, American, Transcontinental, and White Star were quick to sense this value and have adopted the Por-Pail.

RISING DEMAND FOR STEEL GREASE PAILS

Daily manufacturers of grease products are adopting steel pails for the packaging of their products in 25 and 50 lb. quantities. For such sizes a steel container, whether plain or lithographed, is much superior to other types of containers. Grease manufacturers should request samples and prices to see the advantages for themselves.

FREE TO THE PETROLEUM INDUSTRY ! !

If you haven't seen the Por-Pail you had better hurry. Request a free sample today and we'll rush one to you. Specify whether you wish it plain or lithographed.

The Benetco Bugle

Published by

WILSON & BENNETT MFG. CO.

Main Office & Factory

6520 S. Menard Ave.

CHICAGO

Sales offices in chief cities

The BENETCO BUGLE appears periodically with a few informal comments upon steel containers for all departments of the petroleum industry.